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ABSTRACT

Twelve articles describe projects demonstrating what can be done, with Federal assistance authorized under the Elementary and Secondary Education Act of 1965, to advance public school educational quality and service. Seven stories cover Title 3 innovative programs designed to advance creativity in education; three deal with Title 1 projects; one describes a rural program in Appalachia funded under both Titles 1 and 2; and one article reports on a new approach to instruction applying research and training supported by Title 4. Report titles and their locales are as follows: (1) "Teaching in the Inner City"--Milwaukee, Wisconsin; (2) "Creative Teaching Center"--Montpelier, Vermont; (3) "Science Interpretive Program"--Middletown Township, New Jersey; (4) "Slow Readers Move Ahead"--Nashville, Tennessee; (5) "Aerospace Curriculum"--Lincoln, Nebraska; (6) "Stand Up and Walk"--Richmond County, Georgia; (7) "Individually Prescribed Instruction"--Pennsylvania; (8) "Project Discovery"--Rhode Island; (9) "A Chance to Succeed"--Minneapolis, Minnesota; (10) "Planning a Rural Program"--Kentucky; (11) "Teacher Aides Link School and Community"--Berkeley, California; and (12) "Interpreting American History"--Northampton, Massachusetts. (JK)

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OE–20122

Improving Education Through ESEA: 12 Stories

Elementary and Secondary Education Act of 1965

U.S. DEPARTMENT OF HEALTH, EDUCATION
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U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education

Robert H. Finch, *Secretary*

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EA 002 858

Foreword

A project that inspired a slow-reader to read 68 books during the school year, a program that helped a young boy in a wheelchair learn to walk, and classrooms in which youngsters recapture the wonder of discovery they knew in early childhood—these are some of the highlights of the programs described in the following pages.

The stories of the 12 elementary and secondary school projects contained in this publication were written under contract with the U.S. Office of Education. They are presented as a sampling of what can be done, with Federal assistance authorized under the Elementary and Secondary Education Act, to advance educational quality and services in our public schools.

Preface

In 1968 the U.S. Office of Education embarked upon a special program to inform the Nation's educators about new projects developed under the Elementary and Secondary Education Act of 1965. This act and its amendments authorize Federal aid for elementary and secondary school programs in specific areas defined by titles of the act, such as programs for the education of children of low-income families (title I) and for the establishment of supplementary educational centers and services (title III).

A series of articles, objectively written in layman's language and free from educationalese, was planned. Material on individual projects was to be presented in such a manner that school administrators and other educators would be encouraged to seek additional information on how they might adapt such projects to their own schools or plan other new programs.

After deciding that the material could most authoritatively be prepared and presented by regional reporters, who could visit project sites and describe the programs in detail, bids on the special writing project were requested from several private agencies, including Southern Education Reporting Service.

SERS had reported on schools in the South since 1954 and, beginning in 1965, it had expanded its reporting interests to other parts of the United States.

In bidding for the contract, SERS made it clear that it would be subject to no controls from the Office of Education (OE). Special safeguards were also created to prevent the writing project from appearing to be an evaluation or endorsement of the overall ESEA program.

Under the ground rules agreed upon by SERS and OE, the Reporting Service contracted with education writers from the Nation's press, who worked directly with SERS. Using lists of ESEA projects supplied them by SERS, writers checked with school administrators and other education news sources in their area to determine which projects would be of interest to other schoolmen. SERS considered these story recommendations on the basis of their general interest to educators and on whether or not the articles would duplicate others already reported.

With few exceptions, the 60 articles produced under the contract were written by authors from the same State as the project. Assignments were spread to give equitable geographic distribution but since most of the funds and projects came under title I and title III, these two titles received the greatest emphasis. Several ESEA projects, however, involve coordinated programs which receive funds under more than one title.

The same basic educational problems appeared in many of the articles. A number of ideas for stories on good innovative projects had to be rejected because the subject had already been covered. In the rural South, a major problem being attacked by ESEA projects is the impoverished child, the one who needs his teeth fixed and his stomach filled before he begins to show any interest in school. In the urban areas of the North, school dropouts in the ghetto are targets for various ESEA programs.

Many of the articles produced have already appeared in education journals. The 12 offered here were picked by OE to represent a distribution by region, title of the act and type of education problem being attacked.

Seven of the articles cover title III projects and are about innovative programs designed to advance creativity in education. They range from an experimental approach to teaching American history at the eighth-grade level to a new program for dropouts and potential dropouts, from a science center to a central city-community project, from a theater program and a creative teaching center to an aerospace curriculum.

Three programs described were supported under title I. They cover a teacher aide project, a reading center, and a program for handicapped children. A rural program in the heart of Appalachia combines funds from title I and from title II, which supports programs involving school library resources. Title IV of ESEA supports programs in educational research and training, such as the one described which utilizes the promising new approach to instruction known as Individually Prescribed Instruction (IPI).

Many other programs have been undertaken under the eight titles of ESEA. Some of them are referred to in the bibliography that accompanies each of the following stories.

Robert F. Campbell
Executive Director
Southern Education Reporting
Service

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Teaching in the Inner City

A teacher-training and school-community project brings Milwaukee teachers, students, and parents together, through lectures, discussions, new materials, and home visits.

By David Bednarek

Take a white teacher from a comfortable, middle-class background and, without warning or preparation, put her into a predominantly Negro school in one of our urban ghettos.

The result all too often is disaster.

She does not know how to talk to her students, and her students don't know how to talk to her. She knows and understands little of their background and they know and understand little of hers and what she is trying to do. Few teachers achieve success in this kind of setting and look upon their first years of teaching in the ghetto as a kind of penance they must do in order to get a job in a better school.

Universities and colleges that train teachers are just beginning to offer courses and programs that will help the new teacher do a successful job in the ghetto.

Faced with this kind of teacher, the parents of children in school become further separated from the school, unable and unwilling to find a basis for communicating with school teachers and administrators.

This, in brief, is the problem attacked in Milwaukee's Central City Teacher–Community Project, now in its fourth year. The project aims at improving the training of teachers for work in central city schools and bringing together teachers, students, and parents. This is accomplished through a combination of lectures, discussions, and readings on race relations and related subjects, development of new materials for teaching in the ghetto, and frequent, informal visits of teachers to their students' homes.

The area in which the project operates is the central city, north of downtown, the most depressed area in Milwaukee. The area around

Time spent with students and their families improves teacher understanding and school-community relations. At a student's home (right) a Lincoln High School math teacher discusses plans for a picnic in the park. Below, mathematician at bat.

one of the high schools involved in the project contains 53 percent of the city's disadvantaged. The general area contains most of the city's Negroes, the highest percentage of families on welfare, the highest unemployment rates, and the highest percentage of physical and environmental blight.

There are little hard data in the way of student test scores and improved student conduct and school attendance to support the claim that the project is a success. The project's claim for success is based more on several intangibles.

In a report on the first year of the project, Belden Paulsen, University of Wisconsin–Milwaukee political scientist, wrote that a child's grades might not change, at least over the shortrun, but that the personal contact with the teacher made the child more aware of school as something constructive rather than an object to fight against.

After the second year, Edward C. Wilkinson, project coordinator, and Ely Sires, of the cooperative educational service agency, which got the initial Federal grants, said it was too early to say whether reduced absenteeism and tardiness, and higher grades and improved conduct were, in fact, real changes. They also said it was not clear that

the changes could be attributed to the project. This is still Wilkinson's view. He said there were no data on such items as pupil attendance, grade and conduct, or parents' attendance at school meetings that would show changes stemming from the project.

However, teachers in interviews showed some shifts in attitude toward teaching in the ghetto after taking part in the project. Teachers also said that the project gave them the opportunity to develop new materials for their classrooms and to meet the parents of their students.

Expansion of the project from 15 teachers in one school in 1966 to approximately 200 teachers in 11 public schools and 10 parochial schools in the 1968–69 school year also indicates something about the project's success. During that first summer, the project was supported by a $16,356 grant under title III of the Elementary and Secondary Education Act (ESEA) and a $7,296 grant from the University of Wisconsin Extension.

The 1967 budget of $163,000 for 91 teachers came primarily from title III, which provided $127,000. University of Wisconsin Extension provided $27,000 and the University of Wisconsin-Milwaukee School of Education, $9,000.

In 1968–69, for the first time, the Milwaukee public school system contributed $200,000—almost all of its budget for inservice training of teachers. Title III contributed $138,000; the university extension, $35,000; and the UW-M School of Education, $14,000.

For the 1969–70 school year, the city and the State institutions will finance the project, replacing the Federal support. Expansion of this scope in a city considered conservative despite its socialist background would not be possible unless many persons were convinced of the project's value.

One other point about the project's effects is worth noting here. The project's staff developed a list of what they termed apparent solutions to problems in central city schools. These solutions included: a public information program to acquaint the entire community with the problems of the central city schools; decentralization of the administration of the school system; more teacher aides; massive programs to improve reading achievement; increased extracurricular activities; teacher-initiated Federal projects; special State funds for schools in urban, low-income areas; more Negro administrators; and increased incentive to attract teachers to inner-city schools. Nearly all of the suggested solutions have been carried out to some degree. The Central City Teacher–Community Project, of course, was not the only reason for the changes, but it did play a major role.

The project's most important outcome is the apparent rise in morale and hope on the part of teachers and parents in the central city. This was the view expressed most often in interviews with teachers, parents, and students connected with the project.

One teacher, not entirely sold on the project's usefulness, said the important thing was that the teachers were trying. "They will get there in time," she said. "New ideas are being explored, which were not explored previously. The problems the project has are mostly due to its being new. At the beginning I did not like the project because I felt the real issue was being avoided. I still feel this way but I like the project better. There's a lot of hope in it."

What is the real issue or problem being avoided? It is the problem of doing something for the teacher who is not aware of her prejudice. "Some teachers are so prejudiced," she contends, "that they don't even know they are." She said she saw no shift in these teachers' attitudes because there was little time for discussion of touchy subjects.

A similar view was expressed by another teacher, Ben Sklar, 55, a former agricultural engineer who has just completed his first year as a science teacher at the 78 percent Negro Lincoln High School.

Sklar said the project gives him a better awareness of the background of his students and the chance to meet more students. Sklar claims, however, that the project's attempt to study prejudice misses the point because it does not get down to the fundamental paranoia of prejudice. He says Adolph Hitler's *Mein Kampf* should be required reading and it is not. "The books we're reading don't get down to the pathology of prejudice," he said.

Sklar also is not convinced that the students are gaining from the project. "Some kids still mistrust Mister Charlie. The best students are skeptical of the whole project." But he expresses hope when he says the parents find it easier to understand "what we're trying to do."

Two young white teachers look on the project as a way to improve both their ability to communicate with their students and plan a better curriculum. Mrs. Anna Grosgalvis, 24, said teachers did not have time during the year to sit down and talk about how their courses could be improved. The project does offer this opportunity.

Mrs. Julie Pryor, 25, says nothing in her middle-class background and nothing in her university training prepared her for her first year in the ghetto. "I can't communicate with these kids," she said. "We have not been trained in college to deal with these kids. A genuine friendship with the kids will enable me to reach them."

Negro teachers, too, find the project useful. Although no count was made, an estimate would put the number of Negro teachers at about half the total enrollment in the project. Why would a Negro teacher who had lived in or near Milwaukee's central city all his life want to take part in the project? Will Kirk, 23, said he joined the project to find out why so few of his classmates went to college and why so few succeeded after they got there. Kirk said his academic work at the University of Wisconsin–Milwaukee did little to help him understand the problem. He said he got more help through tutoring and counseling at the church in the central city and hoped the project would provide him similar opportunities.

A Negro student, a junior girl, said the project gave her the opportunity to work with only one teacher when she would like to meet more. This, though, was her only complaint. She said she felt her teacher would be a better teacher come fall "because he had a chance to meet more Negroes."

Another Negro student was transferred out of one school because he was believed to be the leader of demonstrations that disrupted the school in recent months. This summer the youngster is taking part in the project and already has organized an electronics club among other students. His teachers feel that his natural leadership ability has been directed along more productive lines through the project.

One mother in the project said she was convinced it helped her child do better in school. At a conference last fall, she said: "If the child is close to the teacher so he can express himself, he is going to achieve more." Another mother said closer cooperation between home and school would help control absenteeism because either the teacher or the parent would always know where the child was.

As stated earlier, the Central City Teacher–Community Project works through a combination of lectures and discussions on race relations and related subjects, development of new materials for teaching in the ghetto, and visits by teachers to the homes of their students. How is this done?

Teachers get involved in the project by request. One incentive is pay. All teachers are paid for 2 months of work at the rate of their previous semester. Teachers also may take a course for graduate credit as part of the project.

The teachers selected for the project select seven to 10 students with whom they want to work. In the case of new teachers, students from the school in which they will teach are selected for them. Female teachers usually pick girls, male teachers, boys. Thirty-five community representatives or persons from the schools' neighborhoods make the initial contact with the parents of the students selected.

Before the teachers began the project, the community representatives spent a week in a workshop devoted to their role in the project. During the week, the representatives learned about the school system, the role of the lay worker in the schools, the community and its resources, and techniques for meeting and communicating with others.

If the parents seem interested, the teacher arranges to call on them at their home just to talk. Later, the teacher and student and his family might want to take part in some entertainment or visit a museum or go to the beach. The project requires the teachers to set aside $50 of their stipends for this purpose.

Most of the teacher–student contacts are made on Monday through Friday afternoons. Often, though, the teachers arrange night or weekend visits if these are more convenient.

Curriculum development, under the guidance of University of Wisconsin–Milwaukee faculty and central office supervisors, takes 15 to 20 hours a week. During this phase, teachers meet in small groups to talk about, and perhaps decide, what they could do to improve their courses. The curriculum work is usually done in the teachers' own schools.

Before this gets under way, however, the teachers meet for general sessions to hear national or State speakers. Speakers last summer inincluded Governor Warren P. Knowles; Wesley Scott, director of the Milwaukee Urban League; and Mrs. Charlotte Brooks, chairman of English, Washington, D.C. public schools. Later in the project at a night meeting, teachers and parents of some of the students heard talks by William L. Smith and Seymour Freedman of Cleveland's Patrick Henry Junior High School, the ghetto school that works.

After curriculum development, the teachers study 14 topics on race relations and related subjects via television, books, and group discussions. Discussions are usually structured with certain questions suggested. The questions suggested cover a wide range of possibilities. To cite a few examples:

How do status deprivation, political weakness, and myths of Negro sexuality affect the aspirations of Negro students?

What can schools do to aid the children who are prejudiced?

How effective are efforts to reduce prejudice, such as brotherhood dinners and interracial teas?

Why has the Negro protest of segregated schools been therapeutic despite its lack of success?

The television lectures, all on tape, included "The Nature of Prejudice" and "The Personality of Minority Groups" by Thomas F. Pettigrew of Harvard University; "The Negro in American History" by C. Eric Lincoln of Portland State College; "Educational Problems Affecting Disadvantaged Youth" by Frank Riessman, Yeshiva University; "Teaching Human Relations" by Jean D. Grambs of the University of Maryland; and "Civil Liberties and Civil Rights," by Francis Keppel, former U.S. Commissioner of Education.

The television lectures are followed by discussions of the same subjects by groups of teachers in each school. Before most of the discussions, the teachers are required to read from a list of textbooks. The required titles included *Education in Depressed Areas* by Harry A. Passow; *The Negro in the Making of America* by Benjamin Quarles; *Crisis in Black and White* by Charles E. Silberman; *The Disadvantaged Learner* by Staten W. Webster; and *The Autobiography of Malcolm X.*

Teachers also are given several suggested titles for optional reading on the subjects discussed.

This academic work is aimed at helping teachers better understand their students and their parents. The teachers feel this is the key to the project's success so far.

Creative Teaching Center

By Clinton Andrews

"The children can't wait to come to school each day," reports a fifth-grade teacher in Vermont's statewide program to remold instruction.

Mrs. Marian Stroud, a 34-year-old teacher, strode into the classroom in Montpelier, capital of Vermont. In her first meeting with the children, she asked them to move their desks back against the wall and sit on the floor, forming a circle around her. The moment seemed right for challenge.

"How many beans are in the jar?" she asked, holding high a glass jar full of dried brown beans.

The boy in the class who generally has the right answers reeled off a number.

At that point, Mrs. Stroud said she could see the faces of the other children relax. They knew the bright boy had done their work for them.

"That's a good guess, Johnny," Mrs. Stroud said. "But how do you know?"

"Now," she continued, "let's all think about this," challenging the rest of the students. "How can we find out how many beans are in the jar?"

A few minutes later, many of the students were telling the various ways the beans could be measured—by weighing the jar and comparing the total weight with the weight of one bean; by measuring the square inches in the jar and comparing the total with the size of one bean.

The classroom episode itself was a measure of a new 3-year program aimed at remolding education and instruction in Vermont schools with the help of a $1.5 million Federal grant under title III of the Elementary and Secondary Education Act (ESEA).

In another nearby classroom, a teacher who has come under Mrs. Stroud's influence, asked:

"What is a sign in nature that a storm is coming?"

"Dark clouds," someone answered.

"What makes clouds dark?" the teacher responded.

"They get full of water," a student said.

"From where does the water come?" continued the teacher.

And so it went.

It is all a matter of asking the right questions, said Freemont Fiske, principal of Union Street Elementary School in Montpelier.

Many of Fiske's teachers are cooperating with Mrs. Stroud and her project in "creative teaching," a statewide project. Mrs. Stroud's creative teaching center, one of five in Vermont, covers the north central portion of the State. So far, Vermont's program involves only elementary education, but it is hoped there will be action centers for high schools in the future.

Each of the five centers was funded $230,000 for the 3 years under title III. The local school districts provide an additional

$20,000 a year for each center. Each action center has a director, with three or four assistants.

Vermont Commissioner of Education Harvey B. Scribner noted there is a large gap between what is known about teaching and what is practiced in the classroom. He hopes the centers will close this gap and funnel knowledge gained from numerous workshops directly into the classrooms.

Mrs. Stroud's enthusiasm for her work is contagious. Montpelier Schools Superintendent Alan H. Weiss reports that all those who attended creative teaching workshops in the summer made use of what they learned, "and the other teachers here have caught the spirit of the thing."

The Montpelier school district is about as typical as a school district can be—with one exception, race. There are only a few non-Caucasian students. The district has poverty and merit scholars, broken homes and mentally disturbed children, well-to-do youngsters, and overprotected children. In grades kindergarten to five, where major emphasis of the program has been directed, there are 800 students.

The action center director and members of the staff go to the schools and talk with teachers, at the invitation of the school or of the teachers. They are available to go into the classrooms for demonstrations, when invited, and they conduct summer workshops to show teachers "the creative way to teach."

"Actually," Mrs. Stroud commented, "we don't solve a teacher's problems, but we try to help her evolve something."

She emphasized that the child's own way of learning—that of discovering and experimenting—is recognized and utilized so that emphasis is placed on learning by the child rather than on teaching by the teacher.

This means more attention to a child's interests. If he is interested in the stars, let his reading concern astronomy and not be from a standard primer.

Mrs. Bonnie Phillips Merritt, a highly regarded teacher in northern Vermont, has led one of Montpelier's fifth grades to the point

"It's all a matter of asking the right questions," a school principal says of Vermont's program to reshape instruction in a more creative mold. Mrs. Marian Stroud and a student (far left) ponder a problem while two youngsters (left) learn by playing a favorite childhood game—cat's cradle. Below, response to the new teaching approach is eager.

Released from his maze in a Montpelier, Vt., classroom, a curious white rat delights a young scientist.

where the kids are nearly teaching themselves. Each Monday morning, she has individual conferences with her students, and together they plan a week's work. For the remainder of the week, the pupils work in the areas that best fit their moods for the moment. One fixed rule, however, requires the students to finish the agreed-upon work by the end of the week.

Some of the learners finish early, and eagerly pursue other projects, such as writing a paper on Africa, building a birdhouse or conducting experiments with electricity.

"The children can't wait to come to school each day," Mrs. Merritt said. "They select their own reading materials. Previously they all read the same lesson. My children designed the room—their science lab, their reading area, their work areas. Why, often they don't even take recess. They work right through."

On a typical afternoon, a student called to Mrs. Merritt: "Quick, come and see what I've just found out about the coldest spot on earth."

"You mean the North Pole, Christopher?" Mrs. Merritt responded.

"Would you believe it's in a remote part of Siberia where the temperature has hit 90 below zero. Isn't that something?"

At the science lab, two inquisitive children cleared an iodine solution with hypo-crystals. "Isn't it like magic, Becky!"

Superintendent Weiss said he seldom sees an elementary classroom now in which the rows are fixed. And he knows from processing requisitions this year that use of complete sets of textbooks and workbooks has diminished.

"We used to get orders for one set of 35 books. Now we get orders for six sets of six books each," he said. "Walk down the halls of the school, and you never hear a teacher say, 'Now students, turn to page 36 in your workbook.'" Instead, Weiss reported, the teachers are preparing "their own, more meaningful materials."

The number of field trips has tripled, he said, and the field trips he approves are not confined to the subject matter at hand. "Each child goes with a different thing to look for."

Discipline problems are fewer, he maintained. He added, "We do have children who cannot handle the program; and in that case, we can still give them the textbook approach."

Fiske placed special significance on orders he got for materials—building sets, wood, balances, educational games—what he called "manipulative materials."

"I've noticed many classrooms have had quantities of water—and never before in my 40 years of education have I seen youngsters who so thoroughly understood measurements—inches, ounces, gallons, yards, and measures of time."

Example: one of his teachers gave two or three pupils a box of 50 buttons. She told the youngsters, "Do something with them."

Soon, they had sorted out the buttons, placing the white ones in one pile, the colored ones in another. Another group of students with the same buttons will sort them by size, or weight, or use a balance to divide them by weight, into equal piles.

"One child's contribution often leads to a new area," Fiske added. For instance, the discussion about nature and storm clouds might end with an exploration of the subject of heat and wind.

"Skillful questions are so important," he said. "You just have to think of asking questions most people wouldn't think of asking young children."

The skills Mrs. Stroud demonstrates in the classroom were developed in the wake of her negative reaction to the American way of teaching when she arrived in this country from England a few years ago. She calls it the "distressing rigid structure of the schools in this country."

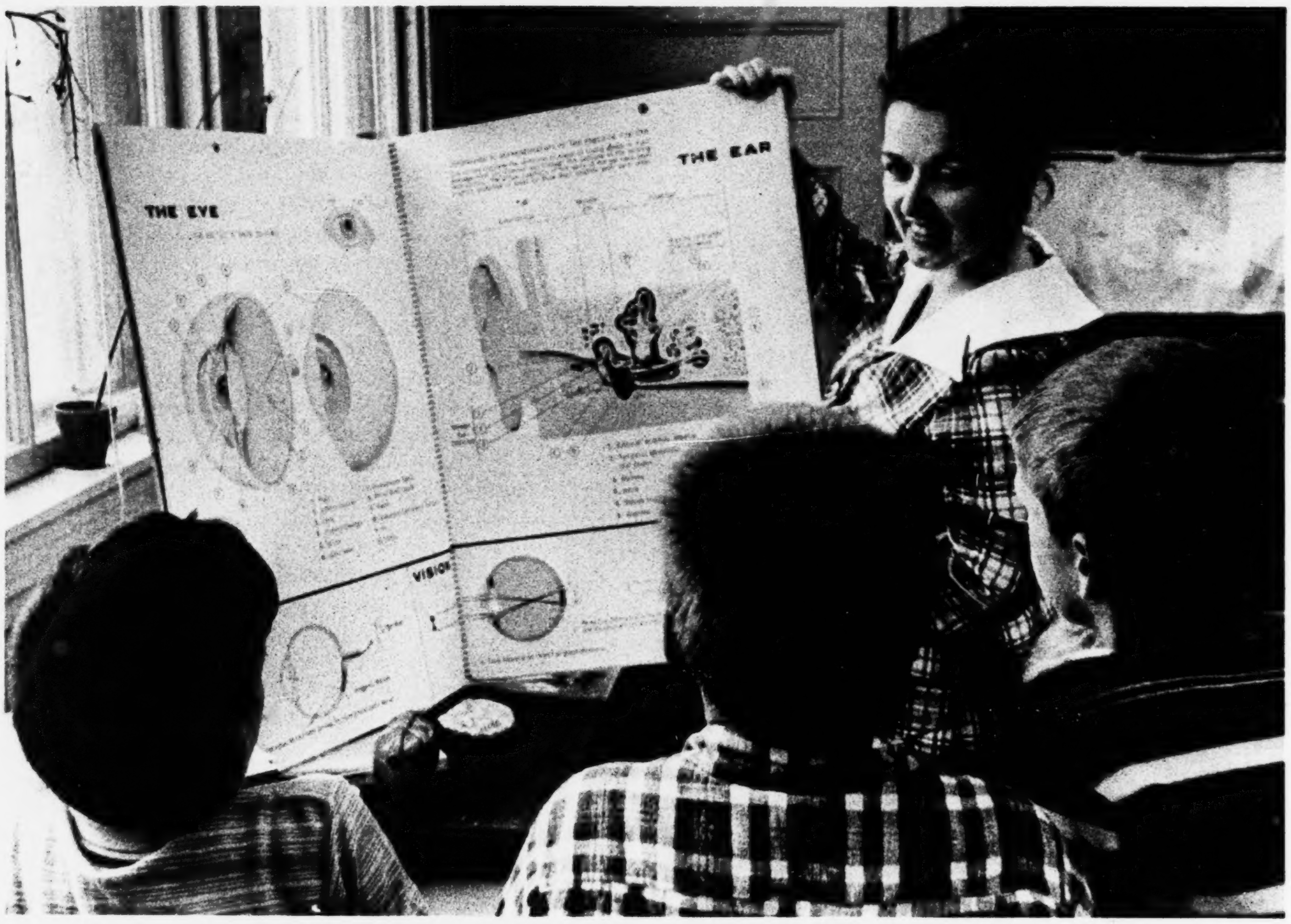
"When children are four and five, they learn so much so fast," she said. "Why do they slow down? They lose confidence in giving answers and forming opinions. I don't like to see that high level of functioning deteriorate. The children go to school motivated. Why do they lose this?

"Most teachers teach as if the child really doesn't want to learn. So often kids sit in rows, silent, and the teacher does the teaching. That doesn't mean the child is learning. The only way you really learn something is to do it."

She suggests making mathematics a reality—letting students learn multiplication tables by application rather than having them taught, or by learning to use an atlas rather than memorizing State capitals.

She also believes in letting a child write a story about that exciting fire engine he has just seen, rather than assigning him to write a story about a cat or a flower, something mundane or lacking excitement.

In order to persuade teachers to think this way, she tries to generate ideas. One day at one of her summer workshops, the teachers were greeted by a big sign on the wall: "What are magic powders?" The next day, they were to bring to the workshop their concepts of magic powders. They showed up with flour, salt, baking powder, cream of rice, headache powders—and each teacher was anxious to find out what the others had brought.



Below, second graders look and listen as they learn more about how they see and hear.

Emphasis is on learning by doing in Vermont's creative teaching center. Physical activity is a welcome part of the process.

Another group was asked: "How many worms are in the football field?" The teacher-students then had to devise their own ways of finding out. Then they compared their answers.

Another group was asked: "Do your feet hurt? Why?" They then calculated and compared the weight on each square inch of their feet—at the suggestion of one of the workshop participants.

A chart was displayed on which was listed the birthdays of each of the teachers. They were asked to make some observations about the chart. Soon a teacher noted that five of the 20 birthdays listed fell on the same day of the week. Another discovered that a majority of the birthdays were in the first half of the year. Another, that most of the teachers were born in the spring.

Their thinking processes were stimulated by something in which they were interested—their own birthdays.

Some of the teachers in the Montpelier system, Fiske noted, are more receptive to creative teaching than others. The veteran teachers, who have more confidence in themselves, are more receptive than the younger teachers.

The results?

Mrs. Merritt's classes took achievement tests at the end of her year's experiment. Seventy percent of the students scored 99 or 100 percent—the highest scores she has ever had.

Superintendent Weiss said no tests had yet been given overall to determine the success of the program, but his teachers have told him the students are learning to read better, are better disciplined, and much more creative in their work.

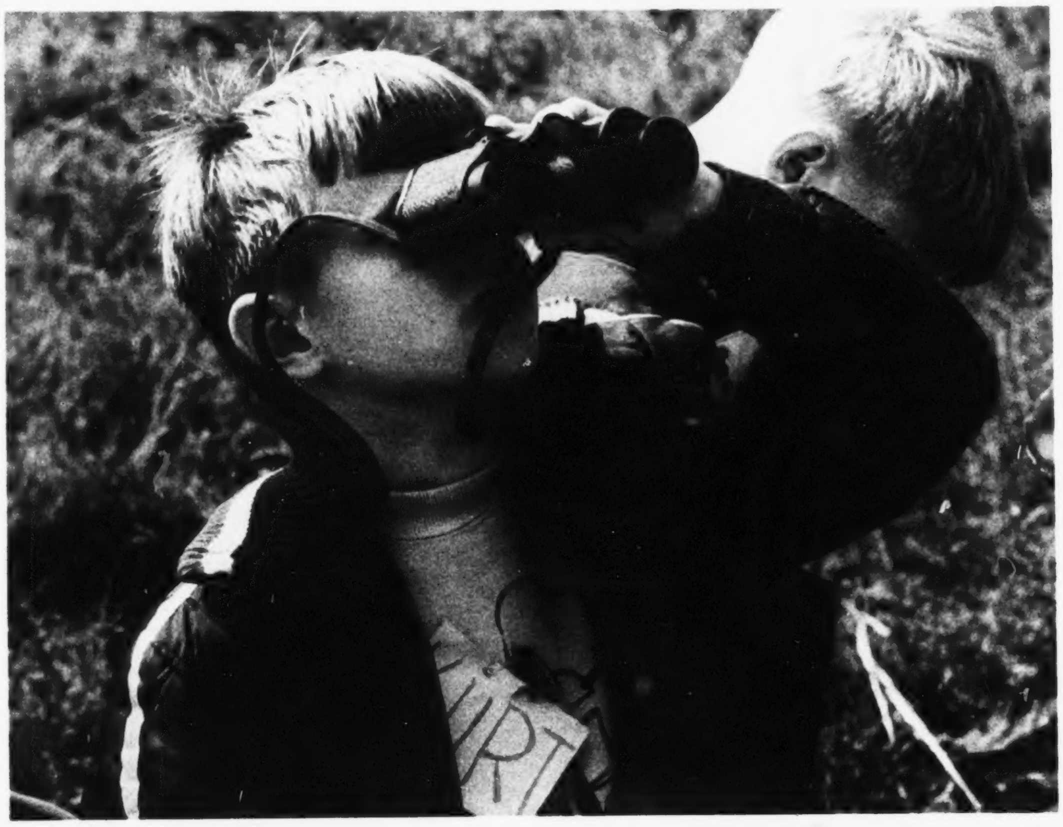
"In some of our classes," he related, "students are writing their own music rather than just sitting and singing during music lessons."

One of Mrs. Merritt's fifth graders put it this way: "It gives us the responsibility of doing many things and makes us feel grownup."

Science Interpretive Program

Learning about man and his environment is the focus of this New Jersey project.

By Francene Sabin



The greatest changes in American education in the last half century have been in the field of science. Yet, even though schools have taught more science and taught it earlier, the emphasis has been on the wrong things. Our children are studying science to enable them to earn a living; now, before it is too late, they must study science in order for them—and the world—to survive.

This, in essence, is the theme of the conservation-oriented Science Interpretive Program at Sandy Hook State Park on the coast of New Jersey. The program began operation in 1966, with a grant awarded, under title III of the Elementary and Secondary Education Act (ESEA), to Middletown Township, N.J., with park facilities provided by the State. Now, after 3 years, the local district is picking up the base of the program, with other agencies joining in.

Middletown Township's school system covers 39 miles in the middle of the "megalopolis" stretching from Boston, Mass., to Washington, D.C., and contains a broad diversity in race, income, culture, living style, and geography. The township's 13,000 school children live in suburban developments, farms, and small towns; some come from families that own yachts; some, living just a few miles from the coast, have never seen the ocean. All need to learn more about man and his environment.

The program at Spermaceti Cove, in Sandy Hook State Park, was planned, written, and developed by two men, Richard C. Cole and J. Ronald Gardella. Both are high school biology teachers and naturalists at the State park. Their stated objectives are:

1. An understanding of natural phenomena, concepts, and principles that are part of the child's environment.
2. An understanding and appreciation of our natural resources and the need for their conservation.
3. The development of love for our country through an intimate identification with our environment.
4. An understanding of the manipulative, experimental, and problem-solving skills which are utilized in science.
5. An understanding of the vocational and avocational aspects of science.
6. The development of habits and attitudes such as open-mindedness, intellectual and scientific integrity, respect for human differences, and social adjustments of the individual.

The Science Interpretive Program is integrated into Middletown Township's fourth-, fifth-, and sixth-grade science study, and every child—in public, private, and parochial schools within the township—takes part in it. The program is a fieldwork supplement to classroom courses and provides specific themes for study.

Fourth graders attend the geological phase of the program, "A

Handful of Sand." This course begins with a brief introductory discussion of geology. Then the children, equipped with worksheets and binoculars, are guided by a naturalist through Sandy Hook's wildlife area. The area is unusually rich in natural variety: the Atlantic coast, a dune beach, marshes, a bay coast, and a holly forest.

For most of the children the experience of learning through the senses rather than texts is new and deliciously exciting. For example, the marsh may look like nothing more than mud and weeds, but when the naturalist gathers the children around a puddle and points out all the "infant" fish and shellfish, the purpose of the area as a "nursery of the sea" becomes clear. At that moment the children are learning why natural marshlands must be preserved, why many of America's wetlands *must* be left unfilled, and where different species propagate. These pleas for conservation are woven through the entire program.

Entering the holly forest—a wildlife sanctuary and a relatively untouched natural world—the children are told, "Quick, gang—there's a green heron!" and 30 pairs of binoculars are raised to watch the gliding sea bird.

Youngsters spend an exciting day learning and treasure hunting at Spermaceti Cove on the New Jersey coast. Some (above) fill buckets with wet coast soil. Later, using old window screens stretched across wooden sawhorses, they examine their shore harvest, hosing the mud to reveal the animal life it supports. Other wetland samples (right) are studied under microscopes.

The trail on which they walk is cool and quiet, sheltered by huge American holly trees laced with greenbriar vines. The path is spongy and covered by sweet-smelling black topsoil. Naturalist Dick Cole stops the group in a small clearing to discuss it. "This black soil or humus is the result of decay. Now, when we say the word bacteria, most geople think of germs, of something bad. But this beautiful topsoil is constituted of leaves decayed by bacteria. It is a returning of minerals to the earth, and decay is what makes the earth rich and fertile. It is spongy to hold rain, water that is necessary to plant growth and in aiding further topsoil formation. When man removes all the vegetation to build roads or factories or housing developments, he loses more than the beauty of trees. He loses his soil and the land washes away, or erodes, and we also have floods. This is why we have to save our forests, and this is the importance of conservation."

The second session is spent in laboratory study of rocks. Using microscopes, the students examine rock, sugar, and salt crystals. The emphasis is on the individuality of each crystal and the origin of rocks as liquid that has cooled and hardened.

The third day is devoted to the study of the ocean, the beach, and land erosion. One of the naturalists leads a discussion of the water cycle: evaporation caused by the sun → rain → weathering of the land → creation of lakes and rivers → the way in which mineral crystals are carried from the mountains by the rivers to create a mineral-laden, salty ocean.

Then the children gather around a table approximately 2 by 6 feet. One end section of the table is slanted up, and the entire circumference is rimmed by 3-inch-high sides. After sand is dumped on the slanted part, the naturalist turns on an old shower head that hangs over it. As the water falls on the sand, the students see, in microcosm, how rain changes the land, creating gullies, rivers, and, on the flat section, an ocean.

As with most of the teaching materials at the Science Interpretive Center, all devices used in this lab demonstration are simple and can easily be duplicated in a classroom.

The final part of this day's session is spent in examination of sand from different areas of the New Jersey shore, with accent on the sizes and types of crystals. The sand from mountain streams is large and rough; Sandy Hook sand is somewhat smaller and smoother; and sand from farther south along the coast is whiter and finer, indicating that it has traveled a greater distance from the mountains.

On the last day, the students again use the laboratory table, this time to learn about the formation of beaches. The naturalist places shells, stones, and grass on the surface. He then directs a "dune machine" at it. This elegant instrument is no more than an ancient vacuum cleaner, with hose reversed, that blows out sand. When the sand hits the objects on the table, it forms miniature dunes.

As they observe, the students discuss the ways in which man can conserve his beaches and dune lands. Then they troop out to the beach for planting time and, by using dead and discarded Christmas trees, arrange rows of windbreaks. This activity is fun for the children, and it also has created a mile of

parallel dunes, some 12-feet high, along the Sandy Hook shore since the program began in 1966. "These dunes," Cole said, "saved our concession area along the beach in the November storm of 1968."

Having helped in real conservation, the students spend the remainder of their last project day collecting—shells, driftwood, and various beach oddities—for their classroom and for themselves.

Fifth-grade Middletown Township students spend their science year studying biology. Before the children start their fieldwork at Spermaceti Cove, their classroom teachers have laid the basis for the program, "The World of the Birdfeeder." Part of this preparation is the erection of birdfeeders on school grounds, to enable the children to observe birds at first hand. To help the children understand biological production and consumption, the teachers give them seeds, some of which are placed in the birdfeeder, some planted in the ground and tended as they grow into plants.

With this as background, the children are ready to visit Sandy Hook. They spend the first day on a field walk, hunting for bird and animal tracks, trying to identify vegetation, and discussing the function of the sun, decomposers (such as mushrooms), and man in the cycle of life.

The second session begins with the students collecting leaves for study. Entering the trailer-classroom, the children are provided with microscopes, paper, and stains. They rub leaves on the paper to observe the color of chlorophyll. They peel an onion, stain the skin with iodine, and examine the cell structure through the microscope.

All the experiments are simple and utilize basic materials. Another example is the test for starch: the children put iodine on a potato slice and note the reaction. By using the materials and observing the color change, they are introduced to laboratory experimental methods of testing.

The third session is devoted to animal contribution to the food chain. The students discuss, with the naturalist, the physical characteristics of particular types of birds—and how these character-

istics help them to survive. The children also cut out silhouettes of parts of birds from their worksheets and, with them, "build a bird." One suggested exercise is, "Let's build a marsh bird. The marsh bird wades, needs a neck for fishing, and a bill for spearing fish." When the appropriate forms are put together, the picture roughly resembles a heron, and the children are a step higher on the ladder of understanding natural adaptation.

Then the students go into the holly forest, where they watch Audubon banders net, identify, and band birds. This teaches them something of the life spans and migrations of birds.

The fourth and last field session is divided into two parts. First, equipped with binoculars, checklists, and silhouette bird keys for identification, students participate in a bird-watching survey from beach through marsh to forest.

Finally they come to the role of man in preserving his natural world. The students plant dune grass made available by the State Conservation Department. After having seen how vital the "green world" is to the existence of birds, animals, and men, they are now contributing to its continuation and to the stabilization of the dune lands. The children often return, year after year, to look at "their dunes," and to show them to parents. "The youngsters feel a real pride in the work they've done to preserve the beach," Cole says.

The remaining classroom year in science is spent in further study of the producers (plants and some animals) and consumers (animals) and of the relationship between living things and their environment.

The third program, for sixth-graders, is the course in marine biology, "Our World in a Fish Bowl." The focus here is on flora and fauna of the "wet" world and how man is destroying the balance of nature through pollution.

Polluted and unpolluted samples taken from the waters off Sandy Hook are examined under microscopes. Then, to explain the significance of pollution to man, naturalist Pete Humeniuk tells the children:

"You have seen our osprey nest in the forest. Well, the osprey, or fish hawk, is supposed to have four eggs a year and produce four little ones. Last year that nest had none. This year we were very fortunate: we got one egg that hatched. Why? Because people are concerned about mosquitoes and they spray the land wholesale with DDT. Now, DDT has chlorine in it, and the chlorate factor is cumulative—it builds up. It is nondegradable—it doesn't break down easily—and it washes down into the streams and rivers and into the ocean. There, the little fish feed on it and absorb it. Then, the bigger fish eat the little fish and they absorb more of it, and the osprey, which eats the bigger fish, takes most of it and becomes sterile. And that's why we haven't had four young produced in our nest.

"But I'm not only concerned about the osprey; I'm concerned about *you*. The biologists tell me you're not edible anymore, because you have too much DDT

The fifth-grade biology course in Middletown Township, N.J., includes field trips to the coasts, marshes, dune beach and holly forest of the Sandy Hook wildlife area. Armed with worksheets, youngsters (left) pause to examine the track of a marsh bird. Below, a beachcombing expedition.

cumulative in you. That may sound funny, but consider what it means. We may find that your children will be sterile, and that isn't funny. And why do we face this problem? Because we are afraid to smack a few mosquitoes!

"This is part of conservation . . . seeing the whole picture. It may eventually develop that human beings will become sterile because of use of certain chemicals; that's what we're concerned about."

In the laboratory, the students are shown how to prepare and maintain a salt water aquarium. The wrap-up of the course is a discussion of the causes and cures of water pollution, with emphasis on what the students can do, now and when they grow up, to aid the forces of conservation.

Beside the courses for Middletown Township children, there are teacher-training sessions; summer school courses open to grades 7 to 12; evening adult education programs in spring and fall; weeklong summer "resident" programs for children from big city ghettos, in cooperation with the Boy Scouts of America; "beachcomber" adult science programs in the summer; guided and self-guided nature tours on Saturdays and Sundays; exchange programs with other school systems; and 1-day courses for classes from other townships.

One day of the marine biology course is given to field study of ocean and bay shore areas. It's a day for learning and a treasure hunt. The naturalist instructors wear wet suits to seine the shallow waters. What is netted is put into buckets of sea water by some of the children, while others are busy searching for shells, marine algae (seaweed), driftwood, and whatever else catches their eye. Still others grab pitchforks and spades and load buckets with the wet coast soil.

Back at the Science Interpretive Center, the children examine their treasures. The beautiful seaweed is used to make pictures with very simple materials: a pan filled with water, a sheet of white paper, a piece of wax paper, and a couple of sheets of newspaper. As the students put pieces of algae into the pans, naturalist Bill Harding tells them what to do.

"Take the white paper, sink it in the water, put a piece of algae on it. Hold the algae and paper with thumb and forefinger, and draw it toward you over the edge of the pan, making sure that there are no air bubbles. Now, put the paper on the newspaper, cover the algae with the wax paper, and cover that with more newspaper. Put some pressure on it, then let it dry for a day, and you have a permanent picture. The algae has a natural glue in it and will stick to the paper."

This is beauty the children can see easily, but then they go on to explore the very "unbeautiful" buckets of mud, which they harvested at the shore. To start, the naturalist dumps the "coastal soil" onto an old window screen stretched across two wooden sawhorses. Then the children run hoses over it and find hidden treasures—worms, snails, fiddler crabs, mussels, eels, gars, shrimp, minnows.

Naturalist Ron Gardella comes up with a smooth, translucent stone. "This is called a Cape May diamond," he announces. "It's a semiprecious stone, fairly soft, but one that can be cut and polished to look like a real diamond. If you find one, it's yours!"

The hunt is on. Beauty in a bucket of mud? Yes, the beauty of discovery, of learning—and, perhaps, of a diamond of the sea.

Exploration along the coast helps city students understand why natural marsh and wetlands must be preserved. A walk in the area also reveals how and where life begins for many marine species. Here youngsters in the Science Interpretive Program study the egg case of a skate.

Anne
ILLVIEW
SCHOOL

Slow Readers Move Ahead

A Nashville seventh-grader led the way by reading 68 books during the school year.

By Ken Morrell

When all the books this smiling student read one school year are counted—they total 68! He learned to enjoy reading while attending a special developmental reading center at his junior high school.

The seventh-grade boy matter-of-factly walked up to his classroom bulletin board and posted the 68th entry to a long list under his name, each entry the name of a book he had read during the previous 9 months of the school year. Although the boy's list was the longest, many other youngsters could boast of 2 dozen or more books on their lists, an accomplishment to be envied by the best schools anywhere.

The youngsters were students at Highland Heights Junior High School, located in a generally low-income area about 3 miles from the downtown business district of Nashville, Tenn. Reading for pleasure or information is rare in families of the area. Reading of any kind is a struggle for about half of the 700 Highland Heights students. Yet the 68-book reader is only one of 60 boys and girls in the school who are winning the struggle in four special classes financed by title I of the Elementary and Secondary Education Act (ESEA).

There are 14 such developmental reading centers in the Nashville-Davidson County metropolitan school system. Each is similar to the Highland Heights center, which included two seventh-grade classes and one each in the eighth and ninth grades during the 1967–68 school year. Each class had only 15 students, an essential factor in a program built around individualized instruction.

All neighborhoods served by the centers are similar to Highland Heights, which is surrounded by small, reasonably well-kept houses located a few blocks from public housing projects. More than 100 of this center's students are given free lunches each school day because they cannot pay for the meals. Many of their parents are on public welfare. At least 11 percent of the student population is from families whose annual income is $2,000 or less. Some students are from broken homes. Others are members of large families.

While not all of the students participating in the reading classes have economic problems—in some cases both of their parents are employed—many of their fathers are unskilled low-paid workers. Fourteen of the 60 students enrolled in the reading center are Negroes.

Some of the students receive little encouragement outside the school to improve their grades in the classroom, or any other phase of their school life. All of the 60 students share one common difficulty: they are "slow" readers. They all need help if they are to make satisfactory progress in other classes and if they are to prepare themselves for college, or later to make an adult contribution to their community.

Youngsters list each book they read, a custom that encourages more reading at home and school. A special classroom library tempts students with practice readers and adventure stories.

While the Highland Heights center serves only a fraction of the total number of students who need reading assistance, its administrators and participants agree the results have been encouraging generally and, for most, remarkably successful.

Since its inception, the program has cost approximately $300,000 for all 14 centers—averaging less than $25,000 for each center for a 3-year period, including salaries of the teachers and coordinator. All of the funds are provided under title I and most of the expenditures occurred in the program's first year.

About $7,300 was spent to establish each center in average size classrooms which later were converted for special program needs. Like the others, the Highland Heights center has four bookshelves, a file cabinet, a paper-storage cabinet, a large storage cabinet, 20 student desks and chairs, an electric wall clock, a teacher's desk, two chart stands, three "learning" stations with lamps, bulletin boards, and other special equipment.

"I'm real pleased with the progress of the program," said William Maggart, title I developmental reading coordinator of the Nashville-Davidson County school system, who has administrative responsibilities embracing all of the centers. "The students never have had anything like this until the program was started here 2 years ago."

Barney Crockarell, classroom teacher at Highland Heights since the start of the developmental reading project, also is sold on the accomplishments. "I think it is a tremendous program," said Crockarell, "and I think it is a shame that more people in the community do not visit these centers and see what their tax dollars do. If they did, they would not be so hesitant about increasing taxes."

M. D. Neely, director of special projects for the school system, was equally optimistic that the centers and other title I programs he supervises are making outstanding contributions to the educational advancement of students.

The Highland Heights center, like the other 13 in the system, is designed to assist students who are shown, through Gates Reading Survey tests, to be reading at least two grades below normal at the beginning of the school year. While the minimum IQ requirement for participation is 75, most of the students rated from 90 to 100 (according to Lorge-Thorndike intelligence test scores). Because of the large number of students in the school with reading problems, center participants are chosen at random.

Students usually attend the developmental reading center instead of their regular English class for 1 hour each school day. Otherwise, they follow a normal curriculum with other students in mathematics, social studies, physical education, science, and other required or elective subjects.

From the time they enter the reading center, most of the students are aware they are attending a unique class. While desks and lighting are similar to other classrooms, students observe a number of items which are different. As the year progresses, they learn the purposes of such special equipment as the "controlled reader"—an electronic reading machine—recorders with attached earphones, projectors, filmstrips, and other visual aids including a tachistoscope which flashes words, pictures, numbers or letters at speeds up to 1/100 of a second on a screen. This equipment is provided by title I funds.

One of the most important phases of the program is the special library, located in the classroom, with brightly colored books designed to help students overcome problems in word analysis, vocabulary, and comprehension. The library, which soon becomes the center of their new experience in learning to read, includes 300 of these special books and about 600 other books.

Listening to music or a narrative is part of the program at Highland Heights Junior High School's reading center, one of 14 established in a Tennessee county to help slow readers move ahead.

BOOKS WE HAVE REA
Debra
Sharon
Cynthia
Gary

In addition to the achievement tests which determine their reading ability, students are given other examinations, including an interest inventory for background information, to determine whether their specific problem is in vocabulary, comprehension, or word analysis. Once this is decided, a special course of individualized study is prescribed. If students do not like to read, the teacher wants to know why. Other tests give him some insight into problems which students may face at home. If students indicate they are worried about special problems at home or at school, an effort is made to detect this concern and to prevent any adverse effect on their progress in the classroom.

The teacher learns from the interest inventory and background information questionnaires what students do after school, in the evenings, and on weekends; how many brothers and sisters they have and whether or not they play together; whether students have any assigned chores at home, whether they watch television, and what type of programs they enjoy. He also learns whether students have ever visited a farm, a zoo, a concert hall, and whether they have ever traveled by airplane, boat, bus, or train.

Among specific questions asked concerning reading habits are these:

- Do you enjoy reading?
- Do you like to have something read to you?
- How much time do you spend just reading?
- Do your parents encourage you to read at home?
- What are some books you have read lately?
- How many books are in your home?
- What are the names of some of the books you would like to own?
- Do you like school?
- What subjects do you like best?
- What do you dislike?
- Do you get any magazines at your house? Do you read them?
- What newspaper do you read? Which part do you read first?
- What would you like to do when you finish school?
- What would your parents like you to do when you finish school?

For some of the students, the interest inventory marks the first time they have ever given any serious thought to some of the questions about their reading habits.

For others, who have experienced trouble in regular classes because they are "slow" readers, the center generally is accepted as an opportunity to obtain help. All of the students are given encouragement to make them more confident.

The "controlled reader" machine is a vital part of the program. Three junior-size machines are utilized for individual and small group instruction; one large "controlled reader" is used for the entire class. Here is how they work:

Words and lines of carefully selected reading material are flashed onto a screen from the junior-size machines in each of three booths—also called "learning" stations—and onto a large screen for the entire class by the larger unit. A moving slot travels across the screen from left to right, covering and uncovering words as it goes, to teach students to read that way at first.

Automatic speeds may be set from 60 to 1,000 words per minute, and both the speed and the level of the material are increased as students progress. Eventually, students read entire lines at a glance. Tests are given frequently to make sure students actually are reading the material and are retaining what they have seen on the screens.

While some students are at work on the reading machines, others listen to specially prepared recordings—through earphones so as not to distract other pupils—to distinguish between hard and soft consonant sounds and for various other purposes. They use phonics practice kits, reading-skill cards, basic sight vocabulary cards, and other aids. They learn to use special kits on science and social studies, also provided through the program. Here, they not only improve reading skill but also acquire information valuable to them in their regular studies. Maps, globes, reading exercises, and numerous other aids also are available to make reading more interesting and more informative.

Crockarell said the posting of a list of books read by center students is effective in encouraging more reading at school and at home. Books in the center library are available to other students in the school to help broaden the scope of the center's usefulness. And it is in the library where some of the center's students say they have received their most assistance.

Included in the library are such books as practice readers of many descriptions, *World Book Encyclopedia*, adventure books such as *The Sea Hunt* and *Tommy the Mountain Lion* and a well-stocked series, *Childhood of Famous Americans*. Students may select from stories about F. W. Woolworth and Oliver Wendell Holmes, Jr. to Daniel Boone and Buffalo Bill, or Eli Whitney and Robert Fulton. Also included is a history of the United States, as well as a six-volume *Negro Heritage Library*.

The key to the project's acclaimed success is that an individualized program is designed for a student's specific need. The reading teacher continually charts the progress of each student, conducts his own evaluation tests, visits their homes, stays informed on their progress in other classes. Three separate folders—diagnostic, active, and cumulative—are kept for each student with material ranging from personal and test data to samples of work. In home visits, the teacher notes the reaction of parents and their attitudes toward their children's education.

Toward the end of the year, pupils are asked to give their own evaluation. They are asked such questions as: Do you feel that your reading has been improved since last September? Compared with last year, do you enjoy reading? Do you like the materials provided? Do you like the special reading machines? Have you read more than last year? Have your other grades improved since you entered the reading center?

The results of the project may be measured in the records, which show 95 percent of the students increasing their reading ability—within a period of 9 months—to at least grade level.

In the ninth-grade class, 14 of the 15 students ranked above grade level—some as high as the 11th grade. Among the seventh and eighth graders, the ratio was about the same. For example, all but two of the 30 students in one of the seventh-grade classes and in the eighth-grade class were reading above grade level after less than a year in the center.

Significantly, no one fails. They receive grades as follows: G—great improvement; A—adequate improvement; S—some improvement. Students are scored on word recognition, vocabulary development, and word understanding. Their reading attitude also is noted on their report cards. But everyone "passes." Students in the junior high grades receive an English credit for the 1 year they are in the center. Only seldom is there a student who shows no advancement in his reading skill.

Most of the principals of the 14 schools that have centers in Nashville like the program. Eighty percent said their school programs had been enriched much, 20 percent said some. Forty percent said their faculty members had utilized the center's facilities much, 60 percent said some. At least half agreed behavioral characteristics of students had improved. The teachers' use of the materials has increased during the 3 years, indicating their interest in the program.

How do the students themselves like the program? Here are some of their comments:

- Debra Moore, 12,—"It has helped my comprehension. I used to make C's in my other studies and now I make B's. I know more words."
- Connie Bennett, 12,—"My spelling has improved. I know more words now when I see them. I have enjoyed it."
- Jerome Mullims, 13,—"I have learned to read faster. I've learned lots of new words and my grades have improved in geography, from D to C; in math, from D to B; and in health, from F to D.
- Johnny Waters, 13,—"It has helped me to read better and faster and to make better grades in my classes."
- Sharon Kirby, 14—"I now make A's and B's in all my classes compared with C's and D's before."

Do the students like the reading machines more than other phases of the program? Surprisingly, not many. Among those interviewed a majority liked to use special exercise cards on phonics, spelling, reading, and vocabulary building. Numerous students said they enjoyed using them for "leisure" reading after completing classroom work.

None discounted the effectiveness of the machines, however, in helping them. Some lauded the encouragement they had received from their teacher. Others said they had obtained more assistance from the special books on vocabulary, word analysis, and comprehension. Some liked the "listening station"—the recorder and earphones. All of the students interviewed were in agreement, however, that their education had received a major boost through the reading center.

Although guiding youngsters to the mechanics and esthetics of reading is the prime objective of the Nashville centers, officials of the program would be the first to welcome other benefits. For Louise Strange, 14-year-old seventh grader, the project brought a simple but significant benefit: "At first, when I got up in front of the class to read, I was scared. Now I'm not."

Aerospace Curriculum

Children count rocket ships instead of blocks, and math students calculate lunar distances in new aerospace education.

By Lucille Howard

When I hear about men
going into space,
Orbiting to an unknown
place,
Oh, how I want to go to
Saturn,
Venus, Jupiter, and Mars,
All the places you cannot go
with cars.
—Wendy, 7.

Instead of counting blocks, children in the Lincoln, Nebr., public schools add up rocket ships. Math students calculate distances to the moon and around the world. And English students compose themes and poetry about space life.

Despite their distance from space centers, major missile installations, international airports, and large aircraft industries, students in Lincoln are among the most flight-oriented children in the Nation.

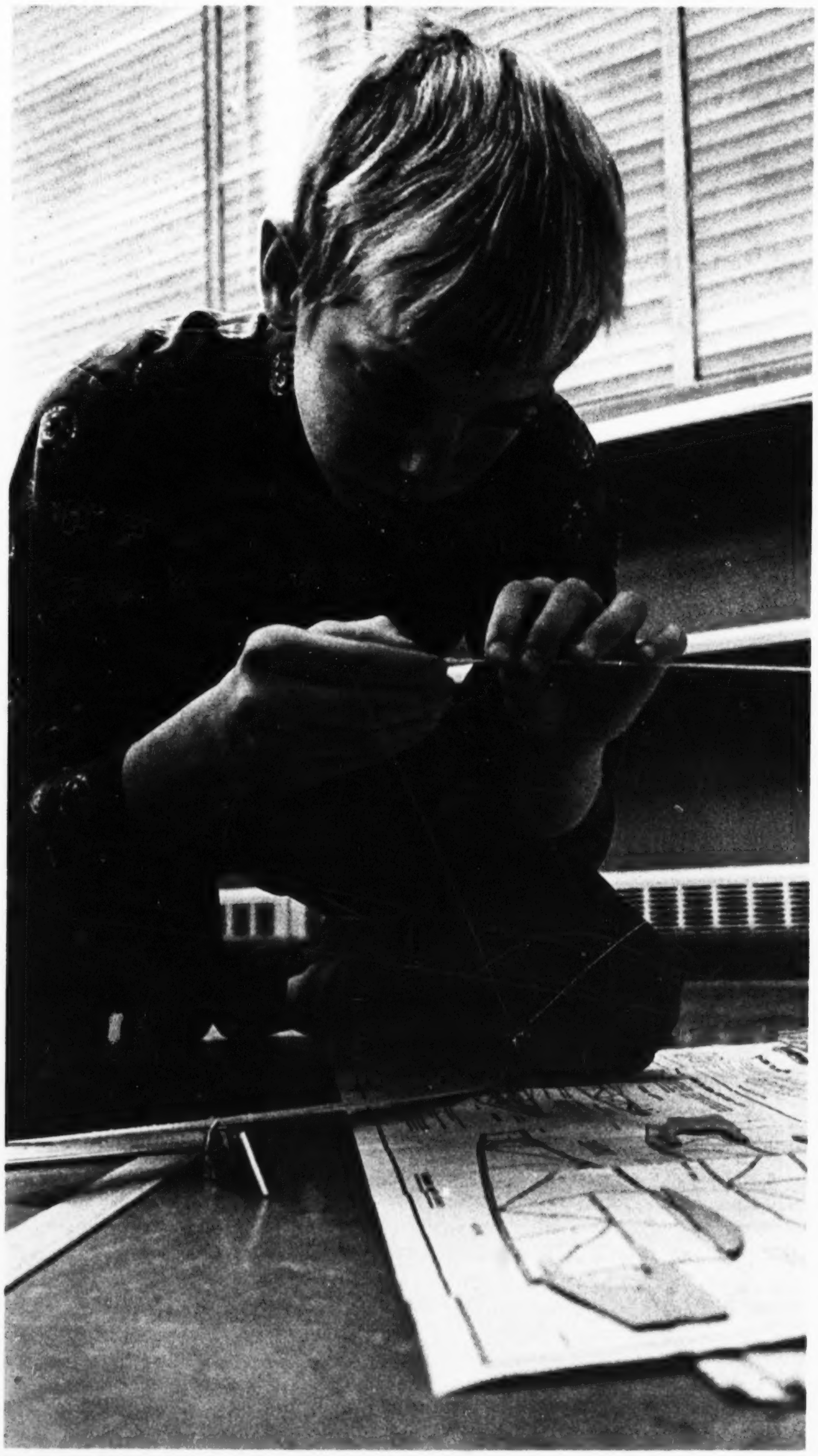
The boys and girls are being offered an innovative educational program that is enriched with aerospace concepts. Curriculum at all grade levels has been elaborated and updated, numerous resource materials have been acquired and aerospace consultants are made available to teachers and students.

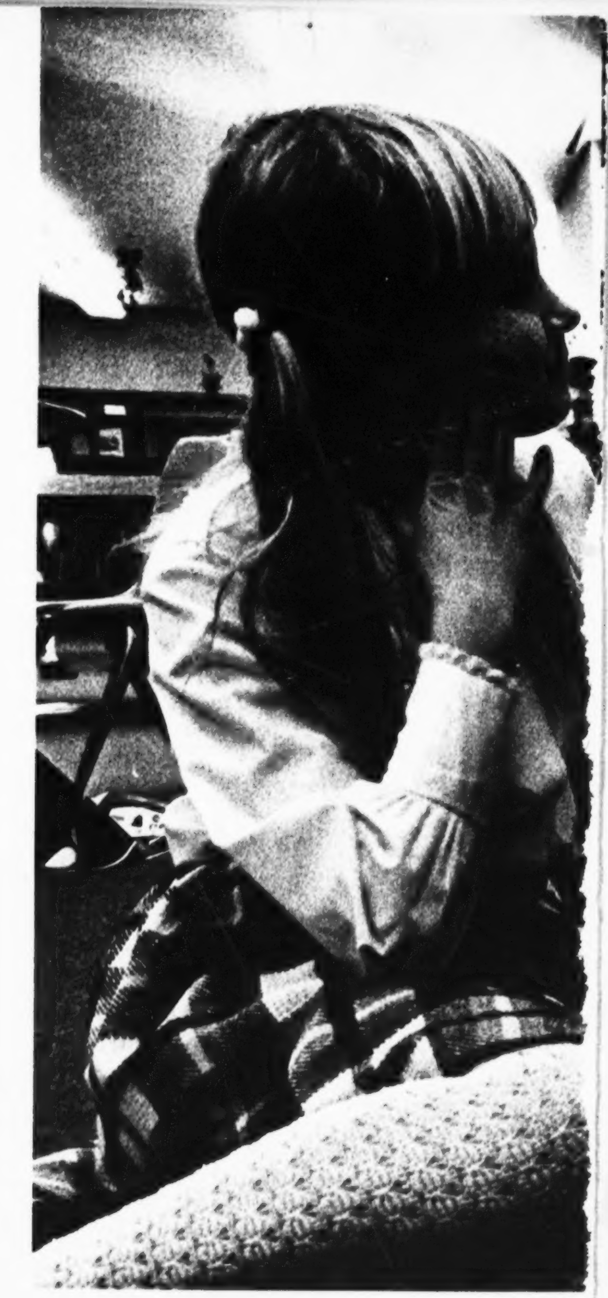
At the same time that the school district is expanding students' knowledge of outer space, it also is stimulating pupil interest in many phases of study. Aerospace topics are being used in math, art, English, music, social studies, and even in literature.

The appeal of aerospace education is unlikely to diminish for many, many years. Interest, in fact, has been heightened with each mission that put the United States closer to the moon. And there has been at least one launch attempt or success every year to provide teachers with new material with which to launch their own space-age education effort.

The need for aerospace education in the schools had been recognized for several years by some Lincoln administrators and teachers with a background of aviation interest. In fact, proposals for such a program, but not for financing, were already being formulated when the first Federal funds for innovative educational projects became available.

Inviting six other Nebraska school systems—Kearney, Grand Island, Hastings, Chadron, Omaha





Aerospace topics were introduced at all grade levels and incorporated into the study of math, art, music, English, social studies, and literature in the pilot aerospace education program in Nebraska. In their school's space materials center (above) two girls study, using solar system flash cards. Left, a first grader prepares to demonstrate a principle of jet propulsion, while a junior high school science student (far left) builds a model airplane.

Westside, and the Catholic Schools in Lincoln—to participate, the Lincoln district immediately acted in 1965 to apply for title III money under the Elementary and Secondary Education Act (ESEA).

The massive project to improve instruction received $341,230 during the 3-year period that ended July 31, 1969. Results of the project affected some 6,160 pupils and 300 teachers in pilot schools. But actually all 57,800 children in the seven participating school systems reaped direct benefits from the project's work.

Perhaps more importantly, at the conclusion of the project's federally financed period, it continued to help improve boys' and girls' education and to serve as a model for other school districts to follow—without most of the toil involved in curriculum development.

The expenditure of Federal funds to emphasize aerospace concepts in a curriculum for Midwestern youths who experience no more impact of the air age—and perhaps a little less—than other citizens is substantiated by a project supervisor, Mrs. Jean Rademacher. "The concerted effort to stress aerospace concepts in the curriculum probably has more meaning here than elsewhere because these students do not have any particular contact with the air age," she says.

What turned out to be preliminary work for the curriculum project was a resources study completed in 1965 with a small National Aeronautics and Space Administration grant. A group of teachers had collected and evaluated aerospace materials in terms of grade level. Dr. Mary Williams, now a curriculum writer for the project, compiled the information into a teachers' guide of possible activities to orient children to space, based on reading materials. NASA published it as *Introducing Children to Space—The Lincoln Plan*. After two printings, more than 5,000 copies have been sold.

According to Dr. Steven Watkins, then superintendent of the Lincoln schools, "After the Lincoln plan, we were convinced that a total effort would be of great value to students and the community. Title III funds provided a natural vehicle for us to do so."

Primary goals of this project are to develop a program of curriculum enrichment on all grade levels and to promote implementation of that curriculum by having a well-equipped instructional media and services center.

During the project period, the aerospace staff also aimed to test the curriculum produced in pilot schools, encourage and support curriculum change in nonpilot schools, and initiate effectiveness studies of the uses of several types of resources needed to advance the project, such as audiovisual materials, programmed learning systems, television, radio, aerospace, and educational facilities and services.

Success of the project apparently has depended on the three summer workshops charged with the actual curriculum development. According to most teachers and staff, the elementary workshops generally prepared the best materials for both science class units and resource activities. The guides already have been revised and widely distributed.

The junior high workshop, directed to develop resource materials for grades seven to nine, however, was unsuccessful in its first attempt. The second attempt was integrated into the high school project as a secondary unit.

The project's first step was the 1966 curriculum workshop focusing on elementary materials. Sixty teachers and administrators from the selected pilot schools were brought to an 8-week workshop-seminar held in conjunction with the University of Nebraska special services headed by Dr. Frank Sorenson. The seminar provided the participants with background to develop the curriculums, in addition to serving as inservice education to stimulate enthusiasm and demonstrate implementation of the materials to be prepared.

Curriculum development actually was performed in three separate groups. The science enrichment

committee constructed seven units for kindergarten through sixth grade, using the spiral approach in which some concepts are reintroduced at a more advanced level. The lessons emphasize the "process of investigation and implementation of the discovery method so that conclusions are derived," according to Mrs. Rademacher.

The units are: kindergarten—earth, air, and space; first grade—flight into space; second—flight through air; third—man travels through air and space; fourth—the moon and beyond; fifth—flight through air and space; and sixth—learning to live in space.

In its final form, the 100-page guide for elementary science units suggests concepts to be presented, activities, experiments, and appropriate instructional media for each grade level.

Another group developed aerospace activities that can be incorporated into mathematics, social studies, art, English, literature, music, and most other elementary school programs. These educators organized the experiences under five major headings: development of flight, satellites and probes in space, man in space, manned research laboratories, and creative art in aerospace.

The 250-page resource activities guide, complete with 40 pages of poetry, includes such topics as safety in the skies, meeting nutritional needs of astronauts, aerospace-related jobs and products, and air mail letters. There are even sections on Nebraska's flying farmers who use planes for weather control, crop dusting, and transportation, and Charles Lindbergh, who received his early flight training in Lincoln. One of the suggested activities in the Lindbergh unit is to compare the type of reporting that appeared in a 1927 Lincoln newspaper article about the flyer's activities in the Capital City, reproduced in the manual, with a similar article that might appear today.

The media committee collected and evaluated instructional materials in connection with both the science units and resource activities. Reviewed for this purpose were books for students and teachers, films, filmstrips, slides, magazines, pamphlets, records, transparencies, photographs, study prints, charts, and models.

The project evaluator, Professor O. W. Kopp of the University of Nebraska, describes the elementary materials as "very good." Kopp claims that the 1966 summer session "established a historic aerospace educational first. . . . The concept of the workshop, the effort and resources put into this project, can be considered in terms of superlatives. [The superintendent] can now claim the first aerospace-oriented school system in the United States. He has the instructional materials to back up this claim."

Criticism of the project came soon after the first summer session, however, when the fall school term opened and the pilot teachers, eager to use the guides and materials, were forced to wait through long printing and media acquisition processes.

While many teachers have been enthusiastic about the materials since the beginning of the project, there are others—even outside the 11 elementary pilot schools—who candidly complain that there is "too much emphasis on aerospace." The abundance of resource materials also is compared by some to large gaps in other curricular areas, such as natural science.

Mrs. Rademacher claims that, on the whole, the curriculums are very well accepted by teachers. She declares that "overemphasis" criticism results from a "misunderstanding of the way to integrate aerospace education. It is not intended to overshadow other areas but to be added where appropriate."

In any event, the children seem to have been thrilled from the beginning. Their knowledge of aviation and aerospace, and command of the vocabulary, astounds visitors. Such activities as assembling and firing rockets prove to be a highlight of their year.

Evaluator Kopp's recommendations to reevaluate some concepts

APOLLO
REFERENCE MISSION
DESIGN

Lincoln, Nebr., students are now among the most flight-oriented youngsters in the Nation. An Apollo illustration sheet and a moon model capture the imagination—and attention—of a junior high school science class during a discussion of the Apollo program.

Fifth-graders work with film strips, models, puzzles, and flash cards during a visit to the aerospace materials center in their school library. Right, absorbed in the wonder of space exploration, youngsters study a model of the Apollo space capsule.

in terms of difficulty at certain grade levels and to avoid some repetition in lessons and materials were considered at the second summer workshop designed to revise and update the two curriculum guides. Mrs. Rademacher points out, however, that even if the same films, for example, are seen by children more than once, the students "ought to be looking for a different emphasis each time."

The revised science unit manuals have since been printed and distributed to every Lincoln elementary teacher for regular use. The revised resource activities guides also are available for general use in Lincoln elementary schools.

Materials developed at the junior high school level during the second summer workshop "were not of acceptable quality" to reproduce and distribute, the aerospace staff and school curriculum experts decided. The major problem, according to Mrs. Rademacher, was the more rigid structure of the secondary schools making innovative change more difficult. In addition, the workshop was not provided with enough time for curriculum development or personal involvement in aerospace-related activities. School Superintendent John Prasch also observes that while use of teachers in writing curriculums was good at lower grade levels, each person in the secondary schools "is a specialist and lacks the overall background that would enable him to write such a project."

Since teaching guides were unavailable, integration of aerospace education the following school year was limited at the junior high school level. One of the few enthusiastic teachers attempting to introduce aerospace concepts into his class was John Alden at Westbrook Junior High in the Omaha Westside Schools. He has found his students "fascinated" with the topics he inserts in mathematics, social studies, and English lessons. As a result of pupil interest, a model airplane club has begun, he reports.

The 1968 summer session developed three different guides, including resource activities for specific subjects in the secondary schools, a handbook on careers in aerospace-related fields for teacher and counselor use, and a curriculum guide for the seventh grade aerospace course teachers, in an effort to fill an apparent nationwide teacher-training void.

Throughout the 3-year project, pilot schools have been equipping individual materials centers with $2,800 each from the title III funds; the aerospace project staff has spent some $10,000 on all types of instructional media for the central office; and pilot teachers have been released for inservice sessions to increase interest in and knowledge of aerospace sciences, including trips to the Houston space center. Two inservice lessons have been videotaped for educational television broadcast.

Midway through the curriculum project, a mobile unit and instructor were acquired to provide additional aerospace content and assistance to teachers and children. A former NASA lecturer, mobile unit teacher Lloyd George gave well-received presentations and demonstrations in all of the pilot schools to some 25,000 pupils, as well as serving as a consultant to the teachers.

Both teachers and principals highly praised the mobile unit program's first year, especially the instructor's ability to perform demonstrations that ordinarily would not be possible in the regular classroom.

In line with the evaluator's recommendations, the program has been altered for school visitation several different days during the year instead of concentrating a program in one school for several days at one time.

Preplanning conferences with the classroom teachers also were recommended for the second year. However, even after such a conference, many of the experiments shown by the new mobile unit instructor, Miss Evelyn Sedivy, during her first presentation, had already been performed in the classrooms for the children. In addition, the wiggling, but seemingly interested, 8-year-olds had difficulty hearing and seeing because she did not use either a microphone or an available stage in the large auditorium. This lessened the program's effectiveness, according to at least one of the teachers.

Outside the project's original aims, the aerospace staff prepared kits of information for the district's homebound students and has begun to develop resource materials for slow learners.

Lincoln's aerospace project is likely to have an impact on school curriculums throughout the Nation after the Federal Aviation Agency distributes some 5,000 copies of the aerospace units for elementary science classes that it has published as a part of its educational program.

Individual inquiries have taken the Lincoln science unit and resource guides to some 300 interested persons and agencies, including 63 school districts in 36 States. Staff personnel have served as consultants at numerous curriculum meetings both in and out of State. In addition, Mrs. Rademacher worked closely with the advisory board of a recently published 14-volume children's encyclopedia of aviation and space sciences. The teachers' guide volume uses many excerpts from, and references to, the Lincoln project, recognizing and crediting the work.

Although Federal support of the aerospace project ended at the conclusion of the 1968–69 school year, the intended curriculum improvement is expected to continue without transferring an expensive burden to the participating school districts, according to the project director. The school systems are expected to reproduce materials that they want for general use, and the Lincoln personnel will attempt to keep the curriculums updated.

While the professional staff in the aerospace office probably will be assigned to positions in the Lincoln schools, the nonprofessional staff, and the aerospace media acquired, will be moved to a new large instructional media center. Plans are for the spacemobile to serve schools on a fee basis for an experimental period following the title III term. Teachers who attended the summer institutes, reports Mrs. Rademacher, "have the responsibility to introduce new teachers to the aerospace curriculum materials and to show them effective use."

Possibilities for developing aerospace curriculums even beyond the academic areas already are being considered by Mrs. Rademacher. She is well aware of the growing aerospace career opportunities and the development of Lincoln's proposed community college, emphasizing vocational–technical education.

Enthusiastic about the need to guide youths toward aerospace jobs and to make some training programs available, she hinted that another project may be proposed to build on the foundation of relevant education offered by the original aerospace curriculum project.

UNITED
STATES

Stand Up and Walk

Teacher understanding and encouragement lead to educational miracles for handicapped children in Georgia.

By Clayton Braddock

For handicapped children in Richmond County, Ga., public schools, miracles don't ride thunderbolts.

The miracles there are hidden in the awkward walk of a determined boy who spent more than a year trying to leave his wheelchair behind, camouflaged by the athletic prowess of a lithe young Negro girl who once could do little more than sit and stare, concealed in the proudly stammered words of a deaf child who once had no language to tell of his anguish, and disguised by the face of a retarded boy whose painfully learned confidence will let him walk the street among strangers without them knowing he is "special."

"We have actually had children learn to walk here at this school," said Baxton Garland, principal of Lawton B. Evans Elementary School in Augusta, the metropolitan hub of the county with a population of 200,000.

"A boy came to us in a wheelchair and he also wore braces on his legs. In the 2 years he has been here he has learned to walk. That's no miracle on our part. The fact that we encouraged and motivated him made the great difference."

The boy who decided to walk his way to manhood rather than ride a wheelchair is just one of more than 1,600 youngsters who receive direct help from the Richmond County program. Hundreds of others benefit indirectly. There are seven classes for the handicapped in Evans School, along with 15 regular classes. In the countywide system of schools, 22 conduct special classes for the handicapped.

Some handicapped children have been helped in Richmond County schools for a number of years, but it was not until 1965—the year the

Elementary and Secondary Education Act (ESEA) was passed—that the program took on a cohesive shape and expanded into major proportions. The board of education spends about $700,000 annually for the program—about $450,000 from its own budget for the salaries of most of the teachers. The balance of $250,000—the part which program administrators say makes the total effort possible—is a grant under title I of the ESEA.

The underlying reason for the program is a human one—children who need special help in learning and meeting the challenges of life. The U.S. Department of Health, Education, and Welfare estimates that more than 11 percent of schoolage children have some kind of handicap which requires some help that regular teachers cannot provide. In Richmond County, that would mean more than 4,000 children—many more than the number being taught in county schools. Most of the handicapped come from deprived homes.

That same percentage would apply to other areas of the Nation. "But here, concern in this field caught fire. It caught the public interest," said Roy E. Williams, coordinator for all federally aided programs in Richmond County. One reason for the public concern is the varied regional backgrounds of the public in Richmond County, including military residents at Fort Gordon, a sprawling Army base, and the Savannah River Plant, an important facility of the Atomic Energy Commission. Many of these parents have come from school systems where this kind of service is provided. Their children add to the diversity of the student body.

Federal funds are used to pay for vitally important equipment and material as well as the salaries of eight of 60-odd teaching specialists and, at least, one aide for each teacher. Some classes have two or three aides. About $700 is spent on each child in the program, $175 more than is expended on other students in the county schools.

"These teachers of the handicapped children must be unusually skillful and patient," said Freeman Self, director of the program and a former principal of one school where five blind or partially sighted children attend. "The most important thing the teachers have got to have is compassion. They should have the same sort of spirit as a missionary and they should be unusually good teachers with a lot of empathy."

Receiving help in the program are 600 children with speech defects; 540 educable mentally retarded; 295 who are taught in hospitals or at the bedside at home; 60 trainable mentally retarded (those whose handicap is more severe than the educable students); 40 totally blind or partially sighted; 35 who have one or more learning disabilities, some known, some unknown; 20 with impaired hearing; 20 emotionally disturbed; and 13 multihandicapped youngsters, including those with cerebral palsy, birth defects, and the crippling effects of polio.

Also included in the program are a school psychologist, a social worker, two itinerant teachers of the blind, and a supervisor.

Typical of the kind of equipment and material bought with the title I money are special school buses equipped with lifts to raise children in wheelchairs on and off, a machine which will reproduce whole pages of Braille so blind children can have the same books as their classmates, wireless headsets with microphones to make partially deaf children mobile in their classroom while keeping them in contact with the teacher or record players, and many other kinds of physical therapy equipment and the best of teaching materials to meet every need.

Winning battles—the student's against his own physical and emotional foes, the teacher's against the odds, the schools' against the mountain of public ignorance—seems to be the central goal in the Richmond County program.

"I try to get my children accepted in public," said Mrs. Gladys Jones, a minister's wife who teaches the educable mentally retarded at Evans School. She is a veteran of 14 years of teaching the retarded.

"I want my children to walk down the street without people pointing and saying 'that is a special child.' Yes, it can be done. I know that. I try to take everyday living and bring it in the classroom and use it to the fullest."

Seemingly small but important victories are won by teacher and students in Mrs. Jones' class when they gain pride in their skill in making simple ceramics, when one boy takes a visitor in tow to explain the complicated process of making an ash tray, when a low-IQ girl glows in her teacher's praise for having completed reading her first book, when a boy walks in front of the visitor but remembers the socially accepted "excuse me."

Mrs. Rachel Dotson teaches 18 children whose handicaps are more diverse and usually much more difficult to identify. These are children with so-called "learning disabilities," those unknown quantities which inhibit their learning to full capacity. They may range from low to high IQ. Mrs. Dotson is assisted by three teacher aides—one a certified teacher, another with 2 years of college training, and the third with 15 years experience in kindergarten work.

Mrs. Dotson, a former speech teacher, is considered by some to be the most innovative and perceptive teacher of the handicapped in the school system. Yet she says the most important teaching factors are not new techniques.

"The more I work with these children, the more I feel that the greatest thing is patience." She says it is necessary to let time and much help have their effect on students with many obstacles to overcome.

"They are often poorly coordinated, distractible, and frequently have speech impediments. Many have no language. Maybe they have an inner language but they cannot express themselves. One was so withdrawn, he made his own playmates in drawings." A slender Negro girl, who sat a few feet away, reading, was a good example, Mrs. Dotson said.

"She couldn't talk when she came to us. Now she's talking. She couldn't hop or skip. Now she is one of our best athletes." Concentration on the physical first often leads to improvement of the intellectual, Mrs. Dotson explained. "The physical is tied in with the learning process. The physical side deals with image, the student's self-concept. From that he grows."

That was the case with a curly-haired 12-year-old boy with sensitive good looks. An evaluation from his former school had reported that the boy had been "thrown out" of school and that he apparently could not learn.

"Now he is the best student in this class," said Mrs. Dotson. "He might have had a poor self-concept

A blind child attending regular classes at the Windsor Spring School in Richmond County, Ga. feels the raised lines of a map to answer geography questions. Below, a ceramics project in a class for the mentally retarded at Evans Elementary School helps youngsters develop pride and skills.

in the class with the regular children. Maybe the teacher neglected to give him a special seat because of the brace on his leg. Here he is accepted as he is."

The future also holds fewer perils for the educable mentally retarded teenagers in Mrs. Juanita Gaylord's class at A. R. Johnston Junior High School, a predominantly Negro school in one of Augusta's slum areas. One bridge between the classroom and the more demanding world of work is Mrs. Gaylord's "8 to 3 Store," a simulated grocery store with shelves of food and a cash register.

"This is a real-life situation," said Mrs. Gaylord. "Because of this store, two of our students got jobs last year. They had enough experience here to go to work." Along with such practical experience as taking inventory, displaying wares, and making change, the students study the city and its government, improve their appearance at a "grooming center" in the classroom, learn employment skills, and are placed in no-pay jobs in the school cafeteria, library, and shop.

Results of efforts by teachers and students are not always outstanding, but there is some kind of success in nearly every child's case.

"The program for the blind is perhaps the most dramatic," said Self, the program director. "This is where you can see results. At least in four or five cases, blind children have entered school, gone through the grammar school, graduated [from high school], and one is in college. They are doing well. They function as normal children."

In Windsor Spring Elementary School, which is a well-scrubbed suburban school nearly surrounded by woods several miles from the edge of the city, blind children illustrate several important facets of the Richmond County program.

The four blind children and one partially sighted child (all other blind children in county schools receive instruction at home or in hospitals) attend regular classes and keep the same pace as other children, using Braille and other materials instead of standard texts. They spend some time each day in a cubbyhole classroom improving their skills with the help of Miss Betty Counts, a teacher assigned to work with them exclusively.

All handicapped children in the county schools attend classes in the same schools with other children. Although they may learn in classrooms with other handicapped children, they are placed in schools with nonhandicapped pupils. The reason is simple: this provides a relatively normal learning environment and nurtures growth to independence in a world that might otherwise be strange and frightening.

While the free association with "normal" children benefits the handicapped students, the reverse is equally true. The presence of blind children in Windsor Spring School is another case in point. The darkness of their world doesn't prevent one from running down the hallway and easily making a right-angle turn into a second hall with the help of his inner sense, or slow another's quest for knowledge, or inhibit another as he takes a visitor's hand to lead him to a classroom. Sighted children help the blind ones when it's necessary, but often the children in the light are helped by their blind classmates.

"If I had more blind children, I could eliminate some discipline problems among my sighted children," said William A. Dixon, principal of Windsor Spring School. "I could assign a blind child to a sighted child. I've done it before.

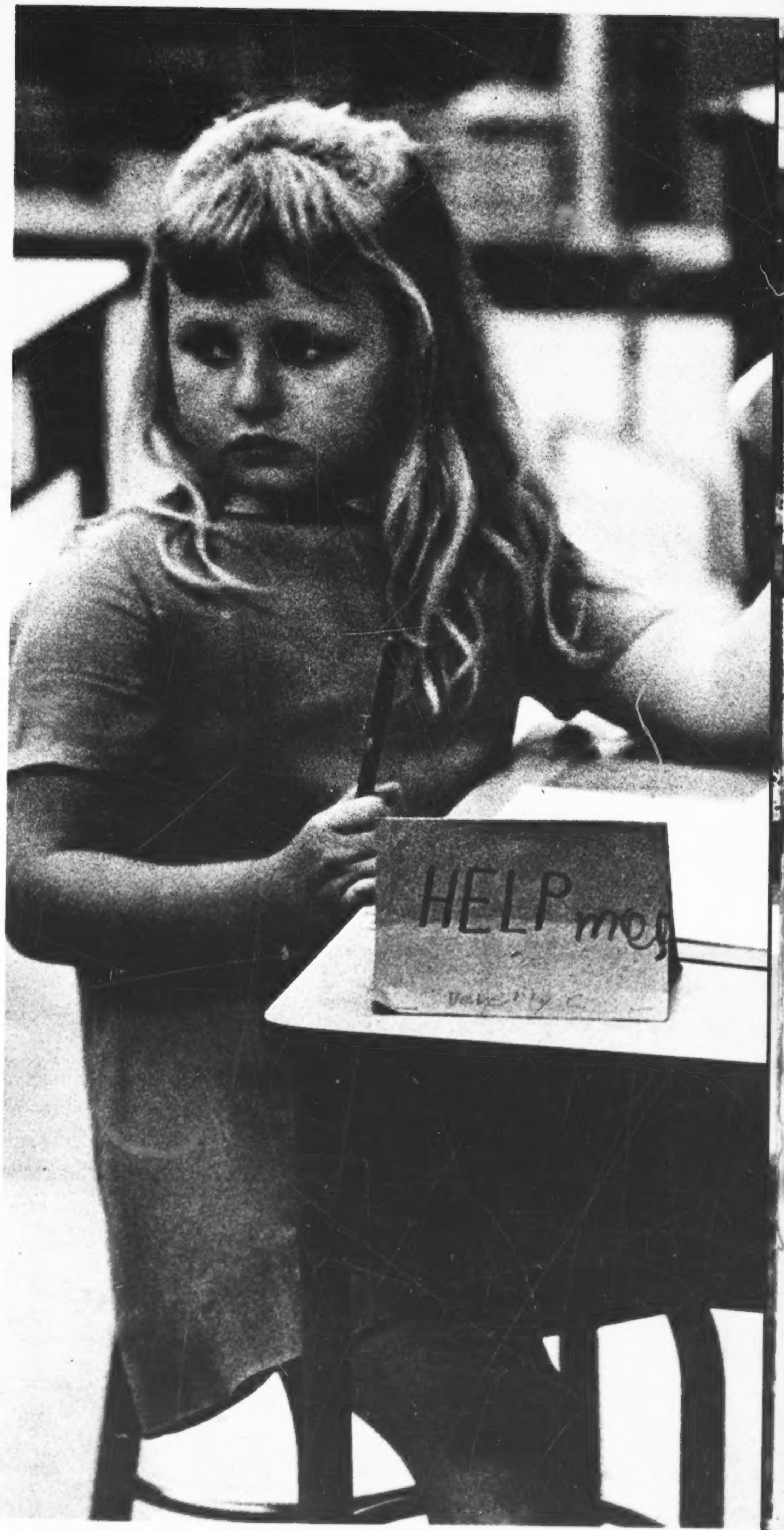
"I had one student who was crude, lewd in language. But when he worked with Glenn [a Windsor Spring third-grader who confidently rides his bicycle in the road in front of his home], this would disappear. He was kind and gentle with Glenn. Maybe he was asking somebody to treat him that way."

At the Evans School (below) Mrs. Sarah McDaniel shows a student with impaired hearing how to form sounds in a word. Right, wearing a portable headset, a partially deaf child enjoys the sound of music in a rhythm class for the handicapped.

Individually Prescribed Instruction

IPI creates a one-to-one relationship between teacher and pupil.

By Kenneth G. Gehret



High hopes are held out for the innovative system known as Individually Prescribed Instruction (IPI).

R. Louis Bright, formerly in charge of research for the U.S. Office of Education, terms IPI one of the greatest educational breakthroughs of recent times.

John W. Gardner, former Secretary of Health, Education, and Welfare, predicts that within 25 years virtually all school instruction will be individualized.

And the former U.S. Commissioner of Education, Harold Howe II, appearing before the 1968 annual conference of the American Association of School Administrators, urged that IPI be promoted in every one of the Nation's schools. He described results of the experimental system as "impressive," then continued:

"Though final returns on IPI are not yet in, this technique appears to offer a real hope for success with culturally deprived youngsters as well as for improving the education of average and gifted children."

In short, IPI is viewed as a means to tailor instruction to the needs and abilities of virtually all school children.

This enthusiasm of government officials is shared by many administrators and teachers. To date some 1,000 school districts have applied to be included in IPI. During the 1967–68 school year, IPI was conducted in 26 districts, including five demonstration schools. Of the

Beverly flashes the signal for help as a second-grade math problem stumps her. A teacher in the classroom will come to her aid.

300 that made the request for the 1968–69 academic year, 71 could be accommodated, raising the total number of schools using IPI to 97, involving 27,000 pupils. Next year (1969–70) IPI will add another 86 districts, bringing the number of youngsters involved to about 45,000 and covering schools in 32 States and the District of Columbia.

Responsibility for introducing IPI into the schools, for testing and improving it, and for training teachers and administrators to work with it, rests with Research for Better Schools Inc. (RBS), a regional research laboratory funded under title IV of the Elementary and Secondary Education Act (ESEA) of 1965.

What's so special about IPI?

The principle of individualized instruction has long been discussed and often advocated by educators. So the theory isn't new.

"What is new," explains Dr. Robert G. Scanlon of RBS, "is the application of a scientific system of managing instruction that brings the teacher and pupil into a one-to-one relationship and, through continuing evaluation of the pupil's work, permits the teacher to prescribe assignments specifically for him according to his need, thus enabling him to advance at his own pace."

Dr. Scanlon was principal of the Oakleaf Elementary School when IPI was first tested there. Now project director at RBS, he is one of the key persons responsible for making IPI available to schools that wish to adopt the system.

Based in Philadelphia, RBS normally confines its operations to the eastern portion of Pennsylvania and the neighboring States of New Jersey and Delaware. However, as the only regional lab testing and refining IPI, RBS is setting up and preparing school personnel for handling IPI programs all across the country. Other regional labs (ESEA provided for 20 of them) are encouraged to take over supervision of whatever programs are established within their territories. In most areas this has been agreed to. Where the regional lab is not accepting responsibility, RBS will continue to oversee the program after installing it.

Limited funds and a scarcity of trained teachers—plus a go-slow policy as evaluation and improvement continue—have restricted IPI to a relatively small number of schools. However, officials expect the plan to be ready for massive application in another 2 or 3 years. Exploratory studies on the use of IPI in a single classroom were initiated in 1961–62. An experimental project involving its use in an entire kindergarten through sixth grade school was undertaken during the school year 1963–64 at the Oakleaf Elementary School in suburban Pittsburgh. This work was conducted by the Learning Research and Development Center of the University of Pittsburgh with U.S. Office of Education support.

With the passage of ESEA in 1965 and its title IV provisions for regional research laboratories, interested parties in Philadelphia conferred on the possibilities of establishing a laboratory in that city. Included were the then superintendent of Philadelphia schools, other area school superintendents, and key staff members.

Prominent in this group was Dr. James W. Becker, executive director of the lab and former research director for the Philadelphia school system, who had earlier held the corresponding position in the Pittsburgh school administration. Familiar with developments in IPI experimentation, he was influential in organizing RBS in 1966 and in the selection of IPI as the initial project for lab sponsorship.

Dr. Becker was named executive director of RBS and promptly worked out a cooperative program with the Learning Research and Development Center. The latter would continue to research and experiment, while RBS would field test, evaluate, and modify the innovations. The lab would also promote the idea of better schools and try to bring improved methods within reach of public schools.

A visit to Richland Elementary School in Quakertown, Pa. reveals how IPI has developed and is currently being applied in one of the demonstration schools. Richland served as a pilot school for math in the 1966–67 academic year. IPI math was inaugurated in the first three grades in the fall; by the end of the term all six grades (18 classes) were using IPI mathematics. At the start of the next school year, IPI reading was introduced. Both programs are still in use, with other subjects presented in the traditional way.

IPI classes at Richland are ungraded. Placement tests at the start of the term determine pupil groups in these subjects. Pretests, frequent "curriculum-embedded" tests, and posttests on each assignment—plus day-to-day observation—tell a teacher a great deal about the individual student and his particular needs, and make possible daily adjustments in his classroom work.

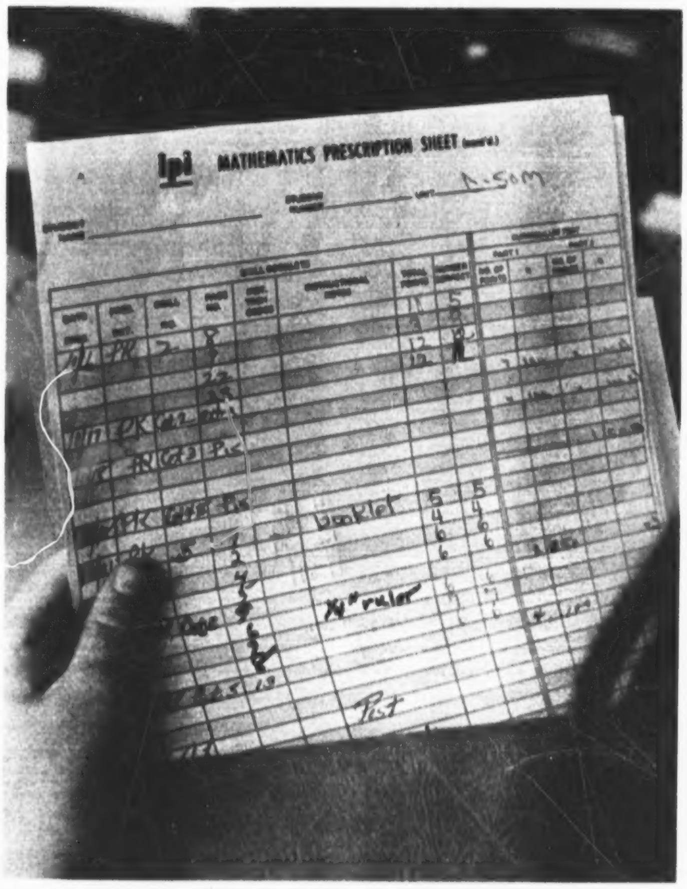
The emphasis falls on the pupil working on his own, even though he is nominally part of a group. Where advisable, some instruction is given on a group basis. This is particularly true in the first and second years, according to principal Michael Hresko, since the children are then at about the same point of development. But individual differences soon begin to appear, making individual prescription necessary.

Throughout the various levels, one seminar period per week in each IPI subject brings pupils together for group work.

As a child's classroom exercises reveal certain weaknesses, the teacher diagnoses the trouble and prescribes suitable assignments. The pupil is tested at each step in the mastery of skills and knowledge. If he fails to score 85 percent or better, he is given alternative work or tutoring in the areas of deficiency until he raises his score to the required level.

Teachers and pupils at Richland have access to a wealth of resources in the classroom, in two "materials centers," in a listening room (discs and tapes), and in the school library. A constant flow of

A listening room containing discs and tapes is one of the many resources available to teachers and students in the IPI program at Richland Elementary School in Quakertown, Pa.



IPI permits a teacher to prescribe assignments according to each child's need, so that he may advance at his own pace.

children in and out of the materials centers indicates the importance of these areas in the IPI program and the children's serious attitude toward the facilities.

The value of the IPI approach, as viewed by proponents, is summed up by Dr. Scanlon this way:

"When teachers are given the opportunity to serve as diagnosticians and prescribers of instructional settings and materials, they best perform what their profession demands—they *teach*. Students are freed from the typical drudgery that most schools generally impose and for the first time they find that learning has real meaning and that school can be lifelike."

There is strong concurrence on this viewpoint at Richland. The school board, principal, staff, and pupils seem to agree that the system adds up to improved and more interesting instruction.

When a fourth-grade math class was asked to express its preference between IPI instruction and the traditional method they had formerly known, not one child voted for the old system.

Despite the enthusiasm at Richland and other schools, criticisms have been leveled at IPI. Many of these appear to reflect a predictable need for adjustment on the part of teachers and administrators to a new system and for refinement and modifications within IPI in classroom situations. To date, changes have been frequent, as expected.

More fundamental complaints appear to fall under four headings: Prescription writing demands too much time of teachers; faulty communication and coordination undercut smooth functioning; individual attention in the average-size classroom is more than teachers can cope with; costs place IPI out of reach of the typical school district.

The first of these, the time factor, does not seem to pose a problem at Richland. Hresko calls this criticism "exaggerated." He and teachers interviewed agree that this is a highly individual matter, varying considerably from teacher to teacher. But the principal maintains that an instructor who understands the system can write prescriptions for 25 pupils (a typical class at Richland) in 45 to 60 minutes each day.

And, he continues, these need not be done all at the end of the day since teachers have three or four 50-minute periods free each week while pupils are engaged in physical education, music, art, and similar special classes.

Coordination and communication within the IPI program appear to be relatively effective at Richland. Weekly planning sessions between regular teachers, "floating teachers," and the principal serve, beyond planning, as forums for frank discussion. The principal spends a good bit of time in classrooms and in informal exchanges with teachers. Contacts with RBS are frequent. A lab staff member pays weekly visits to Richland and other IPI schools, talking with teachers as well as with the principal on details of the program, supplies, and so forth. A number of meetings have also been held at RBS headquarters for school staffs and for administrators.

The Richland staff, however, is concerned about classroom pressures resulting from individualized instruction. Teachers can feel frustrated in not being able to reach, promptly, each child who needs help as he proceeds with an assignment.

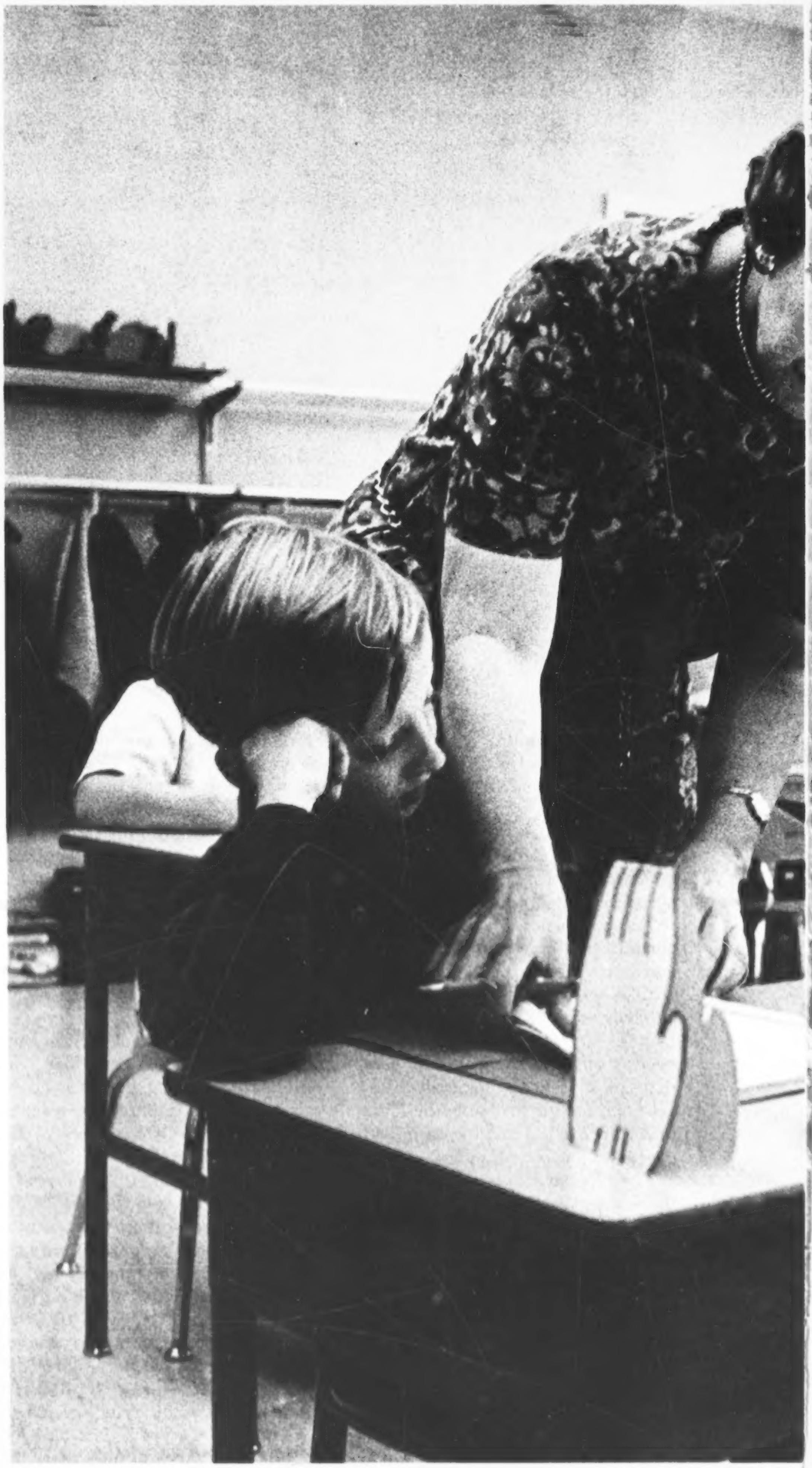
The difficulty seems to have been minimized and to be presently under control at the demonstration school through the employment of 14 teacher-aides: six in reading classes and six in math, in addition to a head aide and a secretary–hostess for visitors. The aides work directly with the teachers and strictly on IPI, helping students in the classroom and correcting tests and assignments.

Also, two floating teachers are on the scene, one specializing in math and the other in reading. They move from class to class as needed and have a close working relationship with the other teachers.

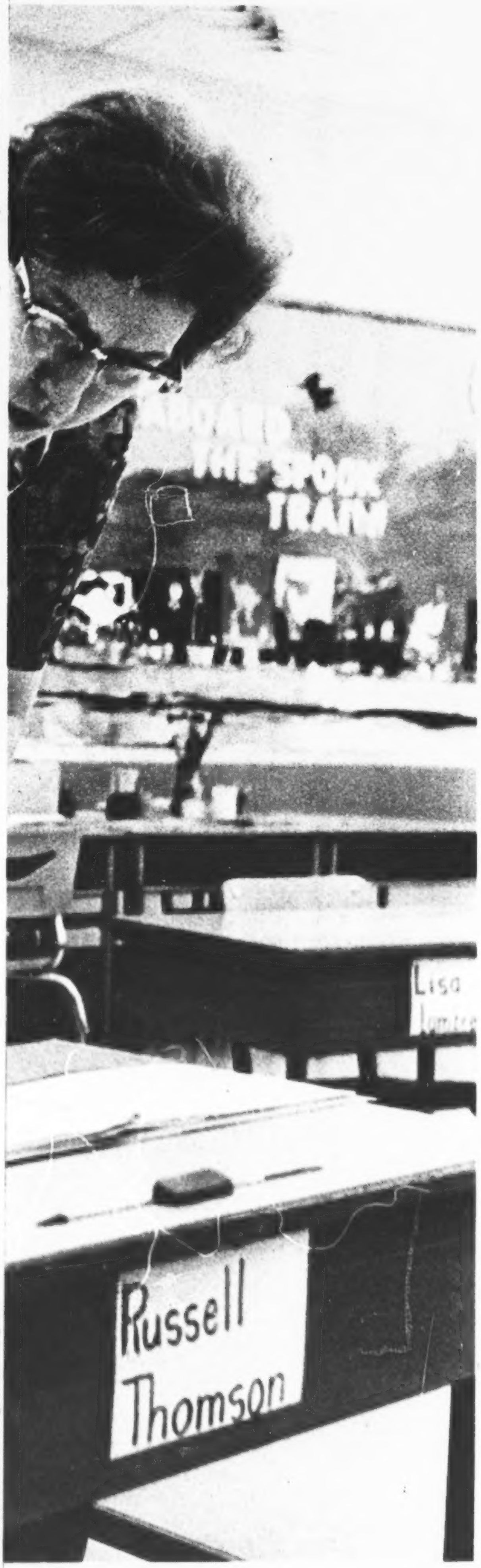
Staff members at Richland express the opinion that while teachers can usually manage the classroom situation with the present two IPI subjects, a full IPI curriculum would probably be more than they could cope with.

The answer to this is not clear at the moment. More floating teachers and/or aides could be employed, though at considerable increase in costs. Peer tutoring is utilized in some schools, but not at Richland.

Computers may be of some help to the individual teacher in the future. Machines are now being used for more detailed recordkeeping, data analysis, and scheduling and program planning. They are expected to get down to the classroom level before long, as a supportive service to teachers. A retrieval system is planned, placing at the teacher's fingertips the full record on each pupil. Whether this and later developments—computer-assisted instruction and making the computer a tool for the pupil—will ease the teacher's classroom load remains to be seen. But they appear to point in that direction.



Although much pupil work in the program is pursued independently, teachers are available when a student needs help. The cutout cardboard hand on Russell's desk signaled his need.



Richland is getting its own computer installation. This raises the question of costs, already an obstacle to acceptance of IPI in some quarters. Hresko does not believe computerization will add to basic costs for the school district. He notes that his county already has three computer centers in its technical high schools, and that local governmental units want to tie in. He foresees the time when the schools will be part of a computer network, possibly with Washington picking up all or a sizable portion of the tab.

But present IPI costs are substantially higher than those under traditional instruction. Materials alone for the math and reading programs come to nearly $12 per pupil per year. Add the salaries of aides and a portion of the principal's salary (since he now restricts his supervision to one school instead of four), and expenses at Richland total about $55,000.

However, Richland, as a demonstration school, does not pay any of these expenses out of local taxpayers' pockets. The money comes from RBS. The regional lab contributes further costs to the Richland program—teacher training and computer data charges.

Including an initial planning grant, RBS has received $4,119,000 under title IV since February 1966. About half of this represents funding from November 1967, through October 1968. For the 12-month period ending in November 1969, the regional lab budget totaled $2.7 million.

"The amount of money received will determine how fast we can move," Dr. Scanlon comments.

The IPI project director and his colleagues have specific plans for expanding the program. Confined until this academic year to elementary schools, IPI now extends from kindergarten to the 12th-year level, and even to one adult group.

Expansion into subject areas other than reading and math is already under way. Oakleaf School is working with a science program, and Richland will undertake a unit in social studies and get a "taste" of spelling by next spring. These will be developed more fully and used more broadly in the following year or two.

Although thoroughgoing test results of the RBS-directed program are not yet available to prove the value of this effort, officials of the research lab have no doubt that they are on the right track. They point to IPI results obtained elsewhere as proof.

A study conducted in Urbana, Ill., compared a group of IPI students in math and reading with a control group in the same ungraded school's primary program. At the end of the year, results showed that all IPI pupils at nearly all IQ levels scored higher than non-IPI students at corresponding IQ levels.

Evaluations at Oakleaf indicate some significant differences for pupils exposed to IPI, but standard tests were found not to cover the full range of IPI material, hence they have not provided an accurate measure for comparison. RBS has since devised its own tests for this purpose.

Among side benefits claimed for IPI by RBS and school officials are better study habits, greater self-direction, improved discipline, and increased responsibility.

Although IPI will continue to be RBS's principal project into the foreseeable future, the regional lab is veering away from the single-focus emphasis. A third of the new budget and an increasingly larger proportion of staff effort (RBS employs 76, over half of whom are professionals) will go into other pioneering projects.

In addition to high-priority computerization developments, these include research training at the graduate level, research implementation teams, development of a program-planning budgeting system and preparation of a bibliography in this area as an aid to the educational community, study and prediction of future school needs ("Year 2000"), and evaluations in "humanizing education."

"Humanizing" delves into changes in attitudes in both teachers and pupils resulting from the shift in classroom environment and interractions induced by IPI. These effects will receive increasing attention as the full ramifications of IPI are explored.

Project Discovery

A live theater program is an integral part of the high school English curriculum in Rhode Island.

By Carol Young

A theater project in Rhode Island shows that today's teenagers, brought up in a media-mod world of television and phonograph records, still can be "turned on" by the masterpieces of Eugene O'Neill, Shakespeare, and Chekhov.

More than 41,000 high school students from the State's cities and affluent suburbs, its rural communities and seaports, its ghettos and once-flourishing mill towns are being introduced to dramatic literature by seeing it come alive on the stage.

The massive laboratory theater program, called Project Discovery, was financed with funds from the U.S. Office of Education under titles III and IV of the Elementary and Secondary Education Act (ESEA) of 1965, a grant from the National Endowment for the Arts, and a local foundation grant.

The project was ushered in during the 1966–67 school year with excitement, some trepidation, and a bit of resistance from the hundreds of teachers, school department administrators, and theatrical personnel engaged in carrying out the staggering proposal.

Although the first season experienced its share of growing pains, the voices of critics today are outnumbered in the chorus of enthusiastic applause the project receives from all corners of the State. Logistic kinks have been ironed

IRELAND'S LITERARY LEGACY
PROJECT DISCOVERY
PROJECT DISCOVERY
PROJECT DISCOVERY
MACBETH
MACBETH

Richard Cumming, composer and director of educational services for the Trinity Square Repertory Company, and Rose Vallely, educational coordinator for Project Discovery (left) discuss theater materials being prepared for classroom use. Below, students attending a performance of Macbeth meet members of the cast, including the young daughter of an actress.

out, the scope of the project has been expanded, and a network of communications has been established among the 31 participating school districts, the Project Discovery staff, and the theater. Friends of the experimental marriage between classroom and live theater hope that it will result in a permanent bond.

The sheer magnitude of the project sets it apart. Every sophomore, junior, and senior—and a sprinkling of freshmen when possible—in Rhode Island's 72 public, private, and parochial high schools is able to participate. Even the handful of youngsters who attend school on Block Island are flown into Newport and bused into Providence for the performances.

The Trinity Square Repertory Company, which opened in Providence in 1963 and reached international acclaim when it performed in the Edinburgh August Festival, tripled its permanent acting cast to 30 to prepare for the backbreaking Project Discovery schedule. The first year the company gave 40 performances along with meeting its regular schedule for matinee and evening paying audiences.

Three plays were given in the 1967–68 season and three in 1968–69. Each year's program offered a variety of works, such as Sean O'Casey's "Red Roses for Me," a drama of the Irish uprising; Shakespeare's "Macbeth"; and an adaptation of the Herman Melville novel of shipboard mutiny, "Billy Budd" by Louis O. Coxe and Robert Chapman.

The project calls for far more than arranging intricate transportation schedules so students can get to the theater for a cultural experience a few times each year. The goal, according to the project sponsors, is to create an understanding and awareness of the role that live professional theater has in America's culture.

Charles A. O'Connor, Jr., former superintendent of the Providence School Department who is now a regional program director for the Office of Education in Denver, Colo., was one of the chief planners for the theater project. He said at the outset his primary goal was to make the theater program an integral part of the English curriculum, "not just a spasmodic attempt to let students see another play."

To accomplish the merger between classroom and live drama, the Project Discovery staff prepares comprehensive portfolios on each play for each of the nearly 600 high school English teachers and drama coaches in the State. The portfolios contain historical information, study guides, reference lists, biographies and pictures of the playwrights, notes from the director and other members of the repertory

company, music sheets, pictures and other appropriate material. The kits save considerable preparation time for the teachers and have contributed to the general acceptance of the program by those who originally objected to the loss of their class time and the intrusion into their planned curriculum.

Thousands of paperback editions of each play are purchased for the schools—one book for every four students. Films, tapes, and records are distributed upon request.

In addition to providing supplies and educational aids, a variety of services is offered to the schools throughout the year. For example, in the 1967–68 season, English actress Joan White and Henry Butler, actor–director of an Oscar Wilde comedy, went to 32 schools explaining and illustrating comedy styles. They used a range of scenes from the plays by Shakespeare to those of living playwrights. In a notable single effort, Miss Joanna Featherstone, another actress, gave 41 school performances of American Negro literature.

In that same year, members of the theater company made about 30 school visits to participate in panel discussions and attend drama club meetings, to lecture, and to provide technical and artistic assistance in school productions.

A special feature that season was the Rhode Show, in which repertory actors toured the schools to teach the elements of drama. It included material from Chekhov's "The Marriage Proposal" and Pirandello's "The Man with a Flower in His Mouth"; a section from Masters' "Spoon River Anthology"; and the Lucy song from Brecht's "Threepenny Opera." Segments of the total package varied in length from 5 to 35 minutes and it was possible for schools to select as many segments as could be fitted into class schedules. The schools were asked to limit the audience size to 200 for this project to permit a discussion period.

Still another highlight of one season was a workshop held on six Saturday mornings. In order to permit active participation, attendance was again set at 200 and many had to be turned away. Students heard lectures on choreography, acting fundamentals, makeup, costuming, and the history of the theater, and then explored particular areas of interest.

A total of $675,153 was spent during the first year of the project. This includes $300,000 awarded through title III of ESEA, $170,153 through title IV, $165,000 from the National Endowment for the Arts, and $40,000 from the Foundation for Repertory Theater of Rhode Island, the Trinity Square players' parent organization.

In 1967–68, the total budget

On stage after the performance, girls from St. Mary's Bay View High School in East Providence, R.I., talk with the actors. Eight hundred high school students from many sections of the State attended this performance of Macbeth at the Rhode Island School of Design Theatre.

dropped slightly to $640,750, including $307,000 from title III, $170,000 from title IV, $123,750 from the Federal arts agency, and $40,000 from the local foundation.

The 1968–69 support was cut back about $100,000 to $544,185 (comprising $250,000 from title III, $154,185 from title IV, $100,000 from the Federal arts agency, and $40,000 from the local foundation). With the end of Federal money, the project plans to operate with local support in 1969–70.

A breakdown of the first year's budget shows how the money was spent: $170,000 in title III funds and $170,153 in title IV funds went to the theater, while the remaining $130,000 in title III support was spent on staff and educational materials and services, including $82,000 for school bus hire.

In addition, $75,000 per year has been awarded for the theater project (under a separate contract supported by title IV funds) to the Central Midwestern Regional Educational Laboratory (CEMREL) of St. Louis, Mo., which is conducting research and assessment of the project for the U.S. Office of Education.

The total allotment from the National Endowment for the Arts went to the theater company, while the local grant was used to rent and renovate a 1,000-seat auditorium since the company's home playhouse was too small.

Looking at the budget another way, the theater company received $505,000 to cover all performance and production costs for approximately 160 performances.

By agreement with 38 other cities and towns in the State, the Providence School Department administers the project. It has the strong endorsement of William P. Robinson, Jr., State commissioner of education.

Rhode Island and New Orleans were the first two places in the country selected in 1966 to try out the 3-year experiment in educational laboratory theater. Los Angeles joined in 1967. Each area has its own variation of the central theme of providing live drama.

To compensate for the cutbacks and yet provide the same services, two grades instead of three attended the three performances in the 1968–69 season. By switching the grade levels around, each student could see two of the three shows. Trinity Square set aside free seats for evening and matinee performances on dates when the paying audiences attended, so pupils could see the one play they missed during the school year.

At the close of the first season the project weathered its only major storm. Controversy swirled when it came time to select the plays for the 1967–68 season because the

Students laugh, cry, boo and hiss as Project Discovery weaves live drama into the English curriculum.

English teachers demanded a say in the matter and the theater director insisted on reserving the right for himself. The first educational coordinator resigned in the midst of the debate, and a new coordinator, Miss Rose A. Vallely, stepped in to smooth things over.

She smiles now when she recalls the tension of her first few weeks in office during which talking and consultation led to the selection of plays acceptable to both sides. Miss Vallely, who coordinates activities for the school departments, and Richard Cumming, a professional musician who serves as both the theater's composer in residence and its director of educational services, share a small cluttered office in a Providence junior high school. Together they make up the meager "staff," working long days at everything from bus schedules and program planning to researching and compiling the teacher portfolios.

A minor furor developed in the spring of 1967 when officials from one school in North Providence refused to send students to see Shakespeare's whimsical farce, "A Midsummer Night's Dream," because the woodnymphs were considered too scantily dressed. A few eyebrows were raised but the issue quickly passed.

The students' reaction to the project and its effect on them can be measured in a variety of ways, most indicating that they are being "turned on." A good many observers consider the project stimulating and a far better method for teaching dramatic literature than handing out nightly homework reading assignments.

One research report shows that 39.1 percent of the high school pupils, or about 15,500, had never seen a live play before the project's curtain raiser, Shaw's "St. Joan." This exposure is enough to convince many that the project is worthwhile. Nearly 10 percent of the students said they have gone back as paying customers to see the company's evening performances. About 54 percent of the students said they have urged their parents to see plays.

Cumming describes the effect on students this way: "They laugh, they cry, they boo, they hiss. It's divine. They are far more responsive than their parents."

Donald Rock, past president of the State Council of English Teachers, noted that student absenteeism, higher than normal on Project Discovery days at first, has dwindled considerably. Word that the plays were good traveled among the students, he said, and more and more attended.

The students have indicated their feelings about the project in many ways. After two performances the seniors in Westerly, a large town in southern Rhode Island, decided to revive the custom of putting on a school play, a tradition that had been dropped 6 years earlier. Drama clubs have also grown throughout the State.

In South Kingston, the high school dramatics club presented a $20 check to the Trinity Square players as a contribution to the statewide campaign to raise $25,000 to finance the company's trip to Edinburgh for the drama festival. The students said they wanted to show their appreciation to the cast.

Student fan mail, perhaps, tells the story best. "I forgot I was in 1967 and was back in time with you. For a child my age to be completely lost in a play is something; you achieved it," a student wrote.

Another student, saying he was speaking for all students in Providence's Classical High School, wrote, "The classroom reactions to these productions were far more enthusiastic than reactions to more usual topics and the classes immediately preceding and following the plays were among the most rewarding of the school year."

The Rev. Edward W. K. Mullen, superintendent of schools in the Roman Catholic Diocese of Providence, has termed the program "a masterpiece" and praises the vision of its planners.

Still to be determined is how best to teach dramatic literature in the classroom. Teachers are now experimenting with materials to learn whether students gain more out of studying the play before or after the actual experience.

One thing seems to be certain. Project Discovery has unlocked doors rarely entered by educators in the past.

A Chance To Succeed

Minneapolis dropouts and potential dropouts develop new attitudes and job skills.

By Austin C. Wehrwein

In the second-floor commons of a Minneapolis public school, pupils sprawl in teenage postures over comfortable chairs and couches. No teachers or administrators bug them as they sip coffee and soft drinks available from convenient coin machines. Nobody is sent to the principal for smoking.

This is the one-of-its-kind "Work Opportunity Center." Here, high school dropouts are treated like adults, though they do not always react that way. Here, the school's name means what it says: an opportunity—more than that, almost a guarantee—for work.

Since its formal start in January 1967, the school has provided, in a relaxed "nonschool setting," intensive, individual attention. The end product is tangible—a job. Equally important, the intangible purpose is to create pride, self-confidence, work habits, and attitudes that will enable a pupil to hold a job and advance.

"Attitude training is the guts of the whole thing, "said Charles F. Nichols, principal–director. "And we don't train people for jobs that have to be dead-ends." Nichols also serves as a member of the National Advisory Council for Vocational Education.

The center, housed in a spacious former Masonic Temple and supported largely by Federal funds, challenges the assumption that to be a dropout is to be dumb or delinquent or both, recalcitrant at worst, naive at best.

The raw statistics on the pupils fit a familiar pattern: almost two-thirds are from disadvantaged areas, about one-fifth are Negro. One-fourth are on probation or parole, four-fifths dropped out in their freshman high school year, two-fifths have a health problem, more than half have home problems.

But not all are dropouts. Some transferred from a conventional high school, lest they drop out; others come after graduation. The common denominator is lack of a salable skill and a good attitude. Lack of such a skill is, in fact, the only requirement for entry other than being from Minneapolis or a suburb and being between the ages of 16 and 21. It is in light of emphasis on the pupil that Nichols, a Negro who happens to have been a dropout once himself, said:

"These pupils are not disadvantaged, they've been cheated."

Once enrolled, they tell Nichols to call them "former dropouts."

The approximately 300 pupils who are at the year-round center at any one time come with every known hangup. Typically, they are loners, yet hungry for attention. They are ridden with the feeling that they are lazy, nervous, reckless, rebellious. Yet nine out of 10 are prepared to spend the time needed to obtain a job skill or credits toward a high school diploma, or both.

Close followup programs, as intensive and flexible as those in the center itself, indicate that almost all who finish training go on to jobs, found for or by them. About a fifth go back to conventional high school or accumulate credits towards graduation at the center.

Said Floyd L. Anderson, the center's curriculum development specialist: "Most people think a dropout is too dumb to make it. Maybe he had enough guts to say, 'I won't take it.' "

Nichols, who dropped out in his freshman year from a Duluth, Minn. high school, but who is now on his way to a doctor of education degree, reminisced: "I can't put my finger on any one factor. At the time, it just wasn't for me."

In other words, one working hypothesis for the dropout is that he is mostly a nonconformist. Nevertheless, the center has found dropouts are often immature, seeking immediate, almost "demand feeding" help, while pretending to reject it. The cardinal rule is that no center teacher is ever "too busy" to help, to repeat, to innovate.

In the commons, a 16-year-old

Opinions are expressed and considered during a Student-Teacher Relationship Meeting in the cafeteria of Minneapolis' Work Opportunity Center.

with straw-stiff long blond hair said he had enrolled because "they didn't say nothing about my hair." This student of art and tailoring went on: "The thing I like most is the teachers. They're so nice. In the other school, they'd say, 'Do this for an hour,' then cut out for the can."

Hurrying up the broad staircase, an 18-year-old Negro, his hair in pronounced Afro style, said he dropped out 3 years ago, had never worked, but now was back for a heavy academic load. "You don't have to come, but if you do, the teachers have time to work with you," he said.

In the basement cafeteria, run by the "food service program" students, a girl of 18, who dropped out in her high school freshman year and had had nothing but casual babysitting jobs since, said she hoped her nurses' aid course would lead to a medical missionary job. She told how the center had arranged with the County General Hospital for removal of warts on her hands and arms that had made her self-conscious and ashamed.

"Some kids," she said earnestly, "come for the fact that they can smoke and drink coffee. But those that stay and really buckle down do get somewhere."

The sense of "getting somewhere," rather than making grades or filling space until graduation, is a key to the center's appeal. Nobody has to go to it; once there, there are no grades. Skipping school was endemic before; at the center, regular attendance is encouraged but not required—although a majority do become regular in attendance.

The reason?

One student put it: "I don't feel locked up."

Neither does the 40-member staff, (20 percent of which is made up of minority group members).

One reason for the sense of freedom is that the center is a research project as well as a school; indeed, it is being closely studied by teacher training institutions. Educators are learning about themselves and orthodox schools, as well as about pupils, through this experiment.

Could it be that the very physical setting of an orthodox high school, as well as its rigid schedule, is "too much?"

Minneapolis School Superintendent John B. Davis regards the center as a test of the ability of a large city school system to provide an alternative to the "unreasonable" demand that all fit the same mold in dress and decorum. But is a separate center necessary?

His answer is that without new techniques, it would be only more of the same. "The typical high school," he said, in assessing some of the blame for the dropouts, "was not creative enough to provide programs that insure a reasonable level of student interests to keep them in school."

Some drop out, some are "encouraged out," he said, adding both groups deserved an alternative. "Society cannot afford to have a 'float' or 'underclass,'" he said.

From the students themselves,

the center has elicited these counts in the indictment of the conventional high school or vocational school:

Too little specific training . . . a lack of independent study facilities . . . boring routine . . . no chance to move at individual speed . . . teachers use slighting remarks ("negative reinforcement," in the jargon) . . . courses are not relevant to the real world . . . teachers "give up" on students . . . teachers "are never wrong" and . . . they are aloof and insensitive.

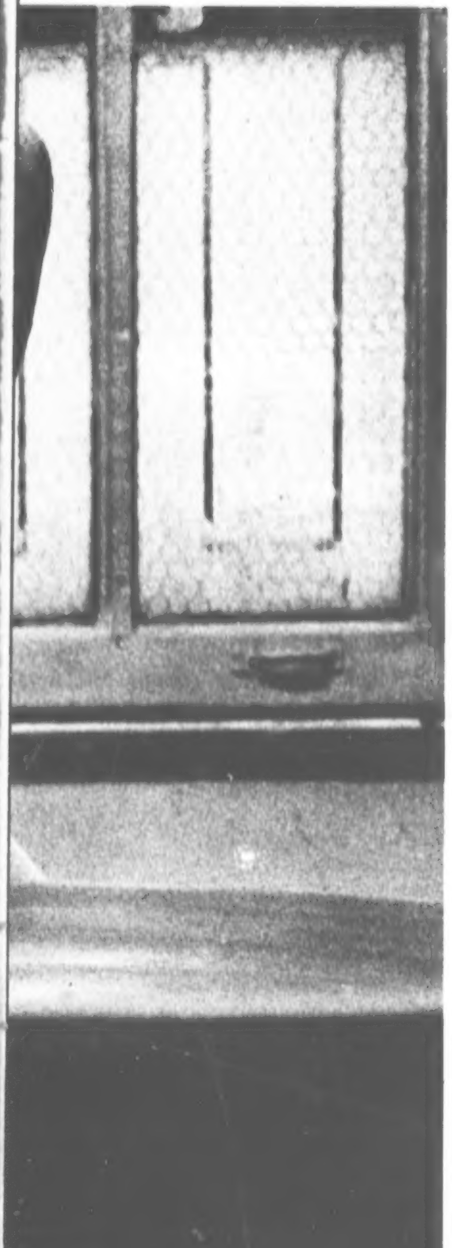
Yet, on the surface, many center pupils themselves are not sensitive. On the contrary, the school has more than its share of cool, tough guys. The median age is 17.2 years, a "grownup" age. But this is "their place," a place to respect.

"Not a single pupil has come through my office door for discipline," Nichols said. Nor have there been racial incidents, although Minneapolis, despite a relatively small (20,000) Negro population out of a 486,000 total, has had at least two racial disturbances in other high schools this year.

The awareness that something like the center was needed grew out of studies that found, not surprisingly, that the "target area" inner-city schools accounted for 25 percent of the city's dropouts. Dropout or not, it was also found that most such young people never got past a receptionist in personnel offices and few ever applied for a job unless they had a friend working in a particular company. And neither the Minnesota State Employment Service nor the private employment agencies could or would do much to place dropouts or those without salable skills. Yet paradoxically, there is a high demand for skilled hands in Minneapolis, which boasts it is an electronics and computer center.

The low dropout rate in the Minneapolis school system (about 17 percent), and a comparable low statewide figure, provides a large pool of high school graduates for the work force. Consequently, many Minneapolis concerns do not hire unskilled dropouts even for beginning jobs, and those that offer on-the-job training want beginners with communications skills. In a word, competition is stiff.

It was against this background that the center was set up. The an-



Eighteen courses help dropouts develop work skills and improved attitudes in the Minneapolis center. Students learn in realistic settings that include an art room, a business education center, and tailoring and metalworking shops.

nual cost in rounded figures is $700,000, of which $400,000 comes from title III of the Elementary and Secondary Education Act and section 4C of the 1963 Vocational Education Act; $175,000 from the Minnesota Department of Vocational Education; and $113,000 from the Minneapolis School Board. The per pupil cost is about $1,000 but this will decrease as fixed costs decrease. Although the per pupil cost in conventional high schools is $647, the center figure is in line with the per pupil cost of $985 in a Minneapolis vocational high school.

The center is like a municipal swimming pool—the students are continually in and out. In less than 2 years, it drew more than 2,400 (about half girls) for interviews, of whom about 1,500 completed a program of training during the average stay of 4 months. Operating round the calendar and on a limited evening basis, it gets pupils from three main sources: referrals by other school counselors, social workers and juvenile law officials; pupil-to-pupil recruitment; and the school's own "community outreach program." Three recruiters, two Negro women and one white man, are on constant search, ringing door bells and talking with prospects on street corners and in meeting places like settlement houses and pool halls. Sometimes it is necessary to provide temporary transportation to insure a recruit's arrival.

At the other end of the spectrum, four coordinators round up jobs, place trained pupils in them, then watch their progress or lack of it, ready to help—or find another job. Realistically, the best jobs are for those at least 18. Said Ron Doll, a coordinator, "Eighteen or over, if the body is warm and he wants to work, we can place him."

The center's home is a substantial, spacious, four-floored, high-ceilinged building next to a major truck route in a dingy, commercialized neighborhood across the Mississippi River from the central business district. The annual rental is $30,000 and a filling station nearby, leased for $1,800 annually, provides some of the most popular like-it-is on-the-job training.

"We have purposely stayed away from school dances, pom-pom girls —that kind of Mickey Mouse," Nichols said. "This is a place of business more than just a school."

Actually, the atmosphere is a mixture of a progressive wealthy suburban high school with a big extracurricular program and a new business run by a group of excited entrepreneurs. Classes are small, averaging 12 youths compared to 26.2 for regular Minneapolis high schools, and short, 20 minutes for "formal" sessions that are usually quite informal.

There are 18 programs, ranging from food service to art, the term "technical training" being broadly interpreted. Remedial work in such things as reading and writing (a common need) is taught where possible as an adjunct to, say, filling station operation, by using a technical manual as the textbook.

Realism is another keynote. Pupils learning how to become retail clerks learn at an actual supermarket checkout counter complete with cash register. Students of dry cleaning, a popular course, have a complete and self-supporting plant and do work for fellow pupils. In the area of homemaking, girls learn not only cooking, in a kitchen any housewife could covet, but "how to be a gracious hostess" in fully equipped living rooms. Homemaking embraces charm school self-improvement techniques, including weight reduction, another common need.

The library is stocked with paperbacks that can be taken out at will and a wide selection of magazines, ranging from *Baseball Digest* to *Punch.* The art room is casual, more like a studio than a classroom, and has led to discovery of some top flight talent. One of the star pupils has progressed through his Picasso period to avant-garde "light painting," an arrangement of neon light on a canvas.

In the typing room, a white girl wearing a button that says, "I Don't Give a Damn," explains to the instructor that she cut class to attend a student-organized meeting on Negro history. The rules, like the courses, are geared to the pupils, and the teachers, picked for their sensitivity and patience, walk a tightrope between permissiveness and guidance.

The typing instructor, a man with a wry smile, nodded but said, "We're not 'nicey nicey' here but you realize that when you get a job you will have to show up every day, don't you?"

Sardonically smiling but nodding in turn, the girl went back to work.

In the large, bright two-story-high center room that is divided into work spaces for teachers and students, someone has pasted on a wall a picture of a man with a monkey on his shoulder.

The graffito is: "Get off my back."

Hardly an original teenage expression.

The point is no teacher has ripped it down.

It is not a demand but a reverse compliment.

Attitude training lies at the heart of the Work Opportunity Center program. Here students and faculty meet for a discussion of school problems.

Planning a Rural Program

Emphasis is on reading, health, and library improvement in a successful Kentucky program.

By Bill Peterson

Lounging on the saggy, unpainted porch where he spends most of his time, Ray Webb, a crippled Eastern Kentucky former coal miner, talked about his 9-year-old son, Elmer.

"He had bad hearing ever since he got the measles. It got so bad you had to look right at his face when you talked . . . sometimes you had to holler.

"He went to school, but always got D's and F's—now he's getting straight A's and B's. Since that operation, they say his hearing is 'bout perfect."

The operation he spoke of, a relatively simple but vital bit of surgery on Elmer's inner ear, was financed under title I of the Elementary and Secondary Education Act (ESEA).

Elmer Webb is a good example of what the act has done in Letcher County, Ky. Four years ago, his right ear was severely damaged during a bout with the measles. The injury, however, was not detected and when Elmer started school his teachers found him unresponsive. He was kept in the first grade 2

Girls and boys in Letcher County, Ky., scored higher in physical fitness tests after stamina-building exercises became part of the county's title I program.

years. His father wrote a note to Elmer's teacher stating that he felt something was wrong with his son's hearing. The teacher contacted a title I social worker who in turn arranged a hearing test.

A doctor in Middlesboro, Ky., operated on the boy's inner ear. Title I funds paid the bill. They also bought him two pairs of pajamas to wear while in the hospital and arranged transportation for repeat visits to the doctor. Twice since then, the social worker has brought to Elmer, his brother, Arnold Ray, 10, and his sister, Belinda, 7, new clothes and shoes to wear to school.

The children's father, Ray, has not worked in 10 years, ever since both his legs were severely injured in a slate fall in a coal mine. Their mother, Thelma, is also crippled. The family, including three preschool children, live in a four-room shanty that has no running water. Their only income is a $250-a-month social security check.

Most Eastern Kentucky counties have title I programs. Letcher County's is not the first, nor the largest. Yet, in testimony before a U.S. Senate subcommittee on education, then U.S. Commissioner of Education Harold Howe II called it "one of the most successful title I rural programs in the Nation."

"What sets us somewhat apart from other programs, is that we think the benefits of our setup are going directly to the child," says Columbus Sexton, the stocky and energetic coordinator of the program.

Sexton, a native of the county and a onetime high school dropout, was a teaching supervisor in the Letcher County school system when title I funds first became available. He and the superintendent of schools, Kendall V. Boggs, became architects of the program. "Right away we knew the funds would help us do some of the things we'd always wanted to do, but had never had the money to tackle," Sexton commented. "So we set about assessing our needs."

The needs were astronomical. Located in the wooded mountains of the Cumberland Plateau in Southeastern Kentucky, Letcher County is in the heart of Appalachia, a poor county in a State where education until recent years has often been second-rate. The area was never wealthy, but with a decline in coal mining, the county's only major industry, Letcher

2

County schools have been faced with a multitude of problems—a declining tax base, a shifting population, and a general deterioration of school buildings. Its population is typical of the area around it. Fifty-three percent of the county's children come from families with annual incomes below $3,000. Unemployment often exceeds 16 percent.

In 1965, following a crash program of consolidation and building, the system's bonding powers were extended to their legal limits, yet the average classroom had 36 students in it and many had up to 48. A survey revealed that a total of 1,661, or almost one-fourth, of the students in the county were significantly educationally retarded and deprived.

The application for title I funds that Sexton and Boggs submitted that December requested $516,380. The proposal was approved with projects directed at: upgrading reading; reducing the high teacher–pupil ratios; and providing health, food, physical fitness, and library services at Whitesburg Elementary and High School, which enrolls about one-quarter of the county's school children.

Proposals have been modified somewhat each year since. As funded for the 1969–70 school year, the program: teaches bright kids who somehow missed out to read; feeds breakfast and lunch to children unable to buy their own; provides clothing and shoes to the needy; places librarians in all major county elementary schools; upgrades physical fitness; hires special teachers in guidance, art, and music; and provides medical help to needy children, including inoculations, free glasses, and ear operations.

"We assigned priorities," Sexton explained. "Our pretests showed that our children were weakest in reading. But after the program started, we found that other problems—emotional, physical, and medical—had a bearing on reading. We altered our program to include medical services, and then learned that nutrition plays an important role in health, so we added food services. Then, of course, not having a library and enough books to read is part of it, so equipping and staffing libraries became very important to us. Now we're for a total program."

Some of the results of the "total program" are obvious. For instance, students at Whitesburg

Elementary and High School, which overlooks the county seat town of 1,800, now eat in a modern cafeteria and study in a library as attractive as any in the State. Their cafeteria was formerly a basement cubbyhole in the school's administration building, the top floor of which was condemned in 1966 as a fire hazard. Their library had been a portion of the old elementary school cafeteria.

Other changes are more subtle. "Teachers used to say 'I can't help that child' and they would give up on him," says Superintendent Boggs. "That's no longer so. We've created in teachers a realization of the needs of their students, not only educational, but physical and emotional."

How has this been done?

Letcher County's title I program is headquartered in a five-room office at the rear of a furniture store in Whitesburg. Sexton, three social workers, reading and physical fitness instructors, along with several clerical employes, work in the office. But the programs they direct are aimed primarily at the county's consolidated schools. Colson Elementary, which sits across Kentucky Highway 7 from a coal loading platform in the northwestern part of the county, is typical of the schools.

Fifty-three percent of the children who attend Colson come from low-income families (the income of a family of four could be no more than $2,400 to fit the category). Last year these children were served 3,113 free lunches in the gymnasium, which doubles as a cafeteria. Of the 409 students at the school, 88 were given clothing and shoes. Seven now wear glasses provided through title I funds.

The statistics, however, tell only part of the story. A library, for example, which until 3 years ago had only a few scattered books on its shelves, now has a librarian and an ample stock of books. The librarian was trained and is paid by the title I program. Many of the books in the library were purchased under title II of the ESEA.

A portable, white metal classroom houses the school's reading laboratory. Its inner walls are lined with popular children's magazines, a set of encyclopedias, reading books, and games. Ten students sit casually at two tables, each working at his own speed. Teacher Edwin Dale Collins moves from one student to the next, spending 2 or 3 minutes with each.

"Some of them (the students) increase their reading level 2 or 3 years while they're in here," he states later. "But usually we expect

Health services are another important part of the multifaceted title program in Appalachia.

A youngster shows a visiting social worker the way to her home . . .

a 1-year improvement."

Collins' reading program is geared toward fourth to sixth graders because, as school principal J. Mose Stewart explains: "These are the crucial years, the ones that can really make the difference. If you can catch a child then you can save him."

Thirteen other Letcher County schools have similar programs, all staffed by teachers trained under the title I program. In addition, two roving teachers travel each day to isolated wooded hollows visiting one- and two-room schoolhouses. A variety of learning techniques are used. Tape recorders, phonographs, overhead projectors, and controlled readers are all brought into play. Phonic workbooks and comprehensive building exercises are held almost daily. A large amount of classroom time is devoted to silent reading. Children are encouraged to read popular magazines, not usually available in their homes.

The reading program is open to all children, regardless of their economic standing, with an emphasis on "the bright kid who somehow missed out." They are kept in the program until they read above their normal grade level. "Sometimes this takes 6 months, sometimes 2 years," says Patsy Ann Fields, reading and language arts supervisor.

"Regular classroom teachers were a little dubious of the program at first," she recalls. "It came so fast we had a real selling job to do. Some teachers originally thought the program was for kids with below-average intelligence. Now we've dispelled that idea; we also encourage teachers to visit our classrooms to see what we are doing."

The evaluation of the reading program for 1967–68 showed that students increased their reading ability 4 months or more while in the program. In 1968–69, students showed better than a 1-year gain. In a random survey, 198 of 200 students said they felt the program helped them. In a similar survey, 112 of their parents described the program as "very good," while 83 of them called it "good."

Health, social work, and physical fitness aspects of the title I program are provided to students at Colson, and other schools, on a roving referral basis. Two social workers visit homes searching for children in need of extra clothing, free lunches, and medical care. Three physical education teachers drive miles each day to rural schoolhouses to conduct classes for children who often have never had any formal physical fitness training. A semiskilled technician tests for eye and ear problems, before referring those in need of care to local doctors.

The work is often rewarding. Officials at Letcher Consolidated Elementary and High School, for example, point with pride to their newly-formed gym class tumbling teams. The school does not have a gymnasium so the teams work out in hallways and in the school cafeteria on mats purchased with title I funds. "See that boy in red," one teacher commented as a sixth grader dove over five of his prone classmates. "Last fall he couldn't do a simple summersault." Students at the school and throughout the county scored 15 percent higher on the President's Physical Fitness test in 1967–68 than they did in previous years, largely due to the emphasis of title I provisions on stamina-building exercise. Last year brought

Through such home visits social workers in rural Letcher County discover which school children need extra clothing, free lunches, or medical care.

an additional 25 percent increase.

However, at other times frustration reigns. For instance, social worker Betty Collins was stopped short on a visit to a family of 10 children when her car sank axle-deep into mud a quarter mile up a mountain slope. After hiking to a nearby strip mine for help, she joked: "I keep telling myself that I'll put in a requisition for a mule, but somehow I don't think Washington would go along with it."

When Miss Collins finally made it to the family's home, 9-year-old Mannie Noble told her that a recent ear operation was helping her hear better in school. "But," her mother added, "she won't wear those glasses you got her. She's afraid she'll bust 'em."

Dr. Richard F. Keller, the recipient of the 1968 Kentucky Jaycee Man-of-the-Year award, coordinates the title I health program. Mannie Noble, Elmer Webb, and hundreds of other children have come under his care. But as yet, only the surface has been scratched, he states. "Our biggest problem now is educating the public—in sanitation, nutrition, and basic health practices."

He relates that 85 percent of the school children in the county need dental care, some suffer intestinal worm disease, and low blood pressure is common—all due to unbalanced diets and poor health practices.

Dr. Keeler, who is the county's public health director, works on an an exchange basis with the title I program which provides him with clerical help. He, in turn, examines children referred to him and arranges for their care with local physicians.

The county medical society helped set up the health program. "Having its cooperation has allowed us to do many things we couldn't consider otherwise," states coordinator Sexton. "You always want to work with the community and get everything else you can latch onto," he advises.

What has resulted in Letcher County is a patch-as-patch-can network of programs, using Federal, State, and local resources. On the local level, for example, the Whitesburg Lions Club purchases eyeglasses for needy children. On a Federal level, the new cafeteria-library at Whitesburg Elementary and High School was built and furnished with a combination of title I, title II, and Child Nutrition Act funds. A portion of the clothing distributed to needy children is made in a sewing center sponsored by the local antipoverty agency; another portion is donated by the World Clothing Fund.

The program also works closely with State universities. Reading teachers, for instance, were trained by Dr. Wallace Ramsey, director of reading studies at the University of Kentucky. Librarians were trained in similar short courses. A team of UK professors directs the evaluation of the program. A speech therapist from Eastern Kentucky University advised teachers on speech difficulties and how to detect them.

Educators are enthusiastic about the program. According to Dr. James R. Ogletree, a UK professor who helped evaluate the program: "Letcher County has gotten its money's worth out of every title I dollar it has received. . . . They're changing the lives of children there —that's what really counts."

Program officials, however, admit that they have made only a dent in needs. They complain that it is hard to find qualified personnel in some areas—a guidance program had to be dropped when counselors could not be found—and that there never seems to be enough money to go around. Then too, they say, some of the programs had to be implemented too fast in order to meet Federal and State guidelines.

But it all comes back to needs. "It's like we're bailing water out of a sinking submarine," Dr. Keller complains. "You never seem to get ahead."

However, he and other officials agree that the look on Elmer Webb's face when he finds out he can hear, like his friends, makes it all worthwhile.

Exercise time at the Letcher County Consolidated School in rural Kentucky.

Aides join a trio of students in a tether ball game on the playground of the Lincoln School in Berkeley.

Teacher Aides Link School and Community

Aides play an important role in a California school system where they assist children with classwork, help teachers, and are encouraged to return to school themselves.

By Jim Wood

When the Berkeley, Calif., schools desegregated in September 1968, one Negro youngster hit upon what she thought would be a sure way of unnerving her white teacher.

"You're always picking on me because I'm black," the student charged. "If you don't let me alone, my mother's going to get you."

Combining a charge of racial prejudice with the hint of physical violence, the threat might have been effective but for one thing. The child had forgotten that there was a teacher's aide in the classroom. The aide, a Negro woman recruited from the child's own neighborhood, knew the classroom situation and she also knew the child's mother.

The aide sternly informed the youngster that if she ever misbehaved in class again—or made a threat—the aide would tell the child's mother. Knowing the aide meant business, the child from that day forward was on her good behavior.

Providing such links between the classroom and the Negro community is only one of the main roles played by Berkeley's teacher aides. Working in all 16 of the district's elementary schools, the aides help teachers prepare instructional materials, assist children with their classwork, and help teachers evaluate disciplinary problems.

In general, the aides do just what their title implies—help the teacher—but in no case does an aide assume prime responsibility for a child's instruction. That is still the job of the teacher. In general, the program has worked well, district officials say, although there have been problems with some teachers, principals, and aides.

The Berkeley program, as described by its founder, Dr. Jerome H. Gilbert, was built on a two-way premise.

"We believed that both the teachers and the aides needed training," he said. "We saw that the teachers were different from the community. The teachers weren't really oriented to what the community wanted, what it was concerned with.

"The teachers were middle class regardless of their color. Their sense of discipline and what was expected of a child were different and the kids had to go between these two different worlds several times a day. The kids had to adjust, and this was asking too much."

At the same time, the aides—who had to be parents of schoolage children to hold their jobs—often shared the community's unawareness of what was really going on in the classroom.

"They had to come into the class to find out," he said. "Some say that low-income parents don't come in because they aren't interested. That isn't true. It's because they perceive of the teacher as a doctor, a professional, and they rely on teachers to do the whole job. When the aides got into the classroom, they saw that the parent was really needed, that the school was not the sole educational agent in society."

Dr. Gilbert said he believes aides have helped carry this message back to their own neighborhoods.

The teacher-aide program began in Berkeley in 1966 under a grant from the Office of Economic Opportunity. To be hired as an aide, the applicant had to live in the school district, have a child in the school in which she was to be employed, have a limited income (which was defined as $2,000 a year for a two-person family, with $500 more for each additional family member), be able to establish rapport with both teachers and students, and give proof that she was free of tuberculosis.

There were no educational requirements, a provision that worked out well as far as hiring was concerned but which led to some misunderstandings between aides and teachers. Although most aides had, in fact, finished high school and a few had received college training, teachers sometimes failed to realize that their helpers were literate, capable women who could do far more than routine housekeeping chores in the classroom.

This confusion of the aides' role with domestic help—against which there is a strong stigma in some parts of Berkeley's Negro community—led, in some cases, to tension between the aides and their teachers. As time passed, and aides demonstrated what they could do, this misunderstanding cleared up in most schools.

Another source of tension for the aides came from the children themselves. Discipline, the aides learned, was often poor.

"It was pretty traumatic at first because the aides, as parents, saw how poorly kids from poor neighborhoods were adapting," Gilbert said. "The aides sought positive ways of correcting this. At first they wanted very authoritarian schools, probably like the ones they'd gone to themselves, and methods they used to discipline their own kids."

Gradually, however, the aides became more accustomed to the Berkeley schools' more lenient disciplinary methods and were able to make substantial contributions to their success.

"When we first came, the bench by the principal's office was always filled," an aide at Lincoln School recalls. "Now it's down to one or two."

George Perry, the coordinator for Berkeley programs funded under the Elementary and Secondary Education Act (ESEA), explained that the schools' use of the aides has changed since the program began. Originally started under the Office of Economic Opportunity, the program has shifted to ESEA funding under title I. In addition to the change in sources of funds, the program was altered drastically—though not in philosophy—by the racial desegregation of the Berkeley school system. To understand the new role of the aides, it is necessary to have some background information about Berkeley.

The city has a population of about 120,000 and the district's elementary school enrollment is 8,800, of whom about 50 percent are Caucasians, 42 percent Negro and 8 percent "other," mostly Orientals. The city's Negro population lives almost entirely in the flatlands adjoining San Francisco Bay, while the white population is centered in the hills above. Last fall,

"Free work" period is book time for many of these first-graders, shown with a teacher aide in their Whittier School classroom.

Aides working in all 16 of the California district's elementary schools help teachers prepare instructional materials, assist children with classwork and increase the amount of individual attention a child can receive.

using buses, Berkeley totally desegregated its elementary schools so that each school would reflect the ethnic pattern of the school district. Secondary schools already had been desegregated in 1964.

The aides, who previously had been working in schools in their own neighborhoods, were shifted to schools throughout Berkeley, including those in the all-white hills. For some of the aides the change was easily accomplished, but others found the new locations difficult, either because they lacked cars to reach them or simply because they were uneasy about working in all-white neighborhoods.

"Some were challenged by the idea and many very much wanted to stay in their own school," said Dr. Jay Ball, coordinator of project development for the district. "Some were quite unhappy at being sent to the hill schools. One aide explained it by saying she just didn't feel 'comfortable' there."

The district tried to take aides' preferences into account when assigning them to the schools. It also, according to Ball, made "guesstimates" as to how the ESEA-identified youngsters would be distributed in the schools and made the aide assignments accordingly. With the desegregated classes, aides often found that only five or six ESEA youngsters were in any single classroom. The aides, therefore, took more than one classroom so that all their youngsters could still receive help, particularly in reading.

Although the Berkeley schools aren't admitting it officially, it is commonly known in the district that some non-ESEA youngsters are benefiting from aides' help, particularly in reading, since aides are generally assigned to help youngsters having trouble and such difficulties are not limited to ESEA children. Nevertheless, although the arrangement is flexible and informal, it is clear that most of the aides' time is taken up with helping the ESEA youngsters.

Just who are these ESEA-identified youngsters? Because of its original affiliation with the poverty war, the district used the OEO target areas as one basis for selection of the youngsters. Also having a bearing were low test scores, whether or not the children were eligible for the school lunch program, and the low-income status of their families. The district did not, however, set a cut-off point of $3,000, or some such figure, as was done in other areas. Its reasoning was that the poverty standards in the Bay Area were different from those used nationally because of higher local living costs. Using these standards, the district identified 1,325 youngsters as eligible for ESEA assistance. This year, after a more thorough screening, another 375 eligible children have been identified.

The program is funded at $405,000, the bulk of which goes for salaries of the 64 aides at $2.48 an hour, plus substantial fringe benefits paid to all noncertificated em-

ployees of the Berkeley schools. The aides, organized by the American Federation of Teachers, have lobbied successfully for a new pay ladder under which, next year, they hope to be compensated for additional experience and training. To Gilbert, this offers one of the most exciting possibilities in the program's future. He believes that if aides take additional college training and are thus able to improve their incomes, they will help show the low-income community the relevance of education. Many aides are now enrolled in one or two courses at a nearby junior college.

"One reason the poor don't take education seriously is that it isn't relevant to the Negro adult," he said. "That is, education doesn't make a difference in what he is doing for a living. So if they go back to school to get training, it helps. If it is relevant to parents and they sit around the table and talk about it, it will mean something to the kids."

To encourage this additional training, the district pays aides 1 hour's pay for every 2 hours spent in the college classroom. The amount, it is hoped, will cover babysitting expenses and transportation. Perry hopes that enough of the aides will continue in the education part of the program to make an impact on one of the district's major problems, recruitment.

"We have to indicate to the teacher aides that they are part of the school system, that it is not a closed situation as far as jobs are concerned. The program can be a source of recruitment of minority teachers in the West and would thus communicate to the community that the system is open, that the kids, and the adults as well, can get a piece of the action.

"Until we can communicate this in a meaningful and sincere manner, desegregation, or integration, will be only a word."

Second-graders enjoy a break after a slide viewing session with a teacher aide at the Whittier School in Berkeley.

Interpreting American History

Memorizing "facts" and reciting them on cue has no place in Northampton, Massachusetts' new eighth-grade history program.

A student considers her next move as she plays Northampton's variation of Monopoly, which exploits local history and situations to study the post-Civil War period.

By Kenneth G. Gehret

The characters on stage represented two eras—the Puritan period and the present. Their dress made this clear, but the spoken lines sharpened the contrast in a way costumes never could. For the real distinction was one of values and concepts rather than physical appearance.

To the 100 or so participating eighth-graders—on stage or otherwise involved in the performance—and their peers in the audience, this was no routine school play. Not entertainment but a lesson in history, a study in ideas, was its purpose. Far from being extracurricular, the staging was an integral part of an American history course.

This is one aspect, but only one, of the unusual way in which history is taught at Hawley Junior High School in Northampton, Mass.

Introduced experimentally in the fall of 1967 with three eighth-grade classes under one teacher, the project involved half of the Northampton students (180 of them) at that grade level and three teachers during the past school year. Next fall all eighth-graders will be exposed to the new approach.

Funded under title III, Elementary and Secondary Education Act (ESEA), the project received $68,000 the first year, and $59,000 the next.

What's the point of the Northampton program?

"History and social studies in

Visual interpretations of historical periods via student bulletin board displays and slide and film viewing are a lively feature of the Northampton project.

general are the most boring part of the curriculum for students," declares Dr. Lawrence A. Fink, chairman of the Department of Education at Smith College and one of the founders of the history program. "But these studies can be made vibrant. And American history has become so for the youngsters in this program."

Arthur Bressan, director of the Northampton project for 1968–69 and one of its teachers, put it this way:

"For so long kids were told, 'Listen to me, read this; now play it back on this exam.' They were upchucking all sorts of information. But what did it mean to them? How did it relate to their lives? Did they get a sense of what history is, and how what went before bears on the present? That kind of classroom method leaves kids with so many names, dates, and other odd bits of information to memorize, and how long do they retain it?

"Our system," he continues, "works on a different premise. We know that history is almost entirely an interpretation. It depends on where you stand when you view a person or an event in history—the background of understanding, personal prejudice, and viewpoint that you bring to it. So we want the kids to start thinking for themselves instead of merely accepting someone's interpretation of the man or event. Thus memorizing 'facts' and regurgitating them on cue has no place in our classes."

The visitor to a Hawley Junior High classroom soon glimpses some of the implications of Mr. Bressan's words. Lining the side walls of the room are a series of book shelves, laden mainly with special historical series. A set of the *Encyclopaedia Britannica* is also found there. A number of sourcebooks, containing the texts of key documents, are scattered on a rear table. Beside it stands a videotape machine. In an anteroom are seven microfilm readers. A variety of films is stored there, ready for student use.

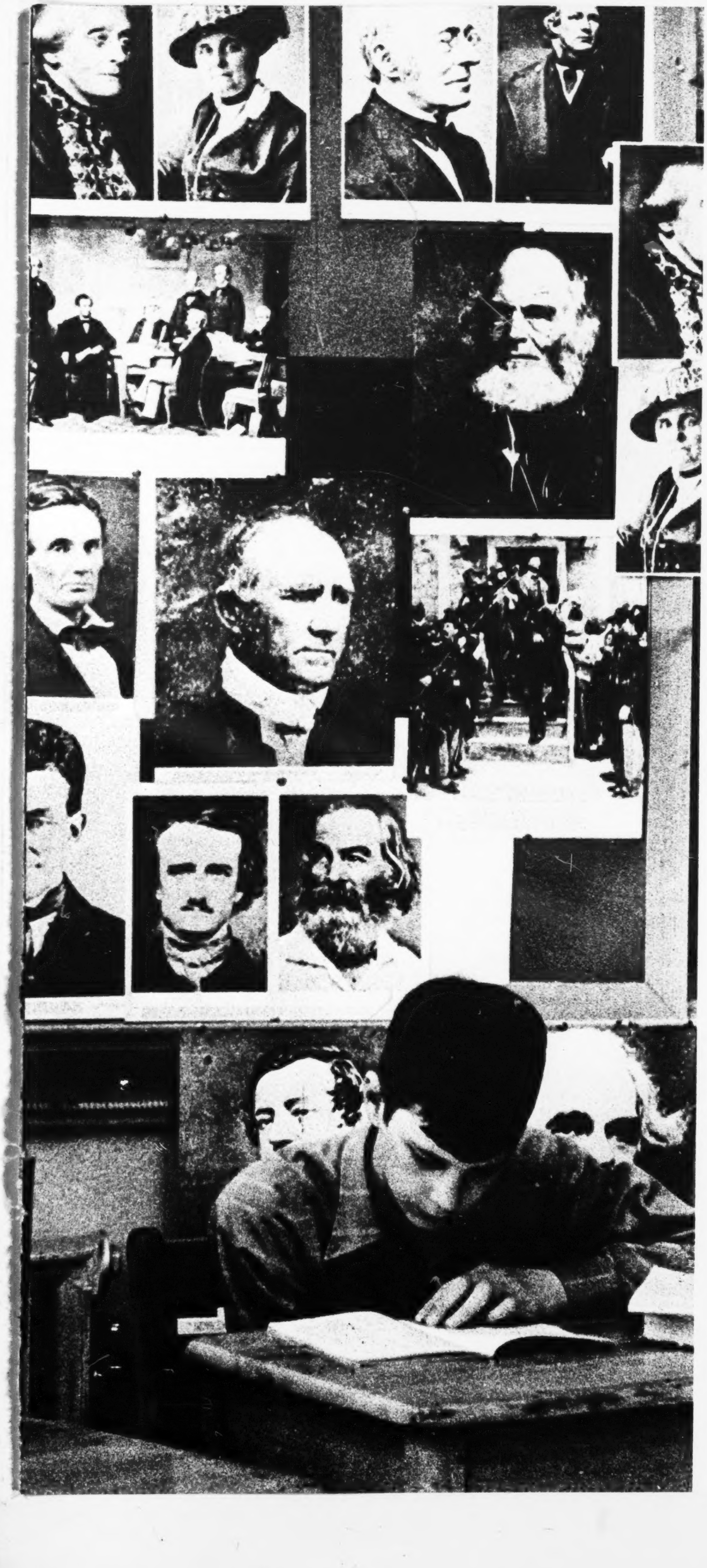
"We want to be sure," Mr. Bressan explains, "that students learn that a source is more than simply a book, and certainly more than a textbook. In fact, we don't use a text in the course. Yet there are lots of books, not only in the school library but in the excellent town library nearby."

Two of the books that get the hardest wear are the *Northampton Book*, published in 1954 on the tercentenary of the founding of the western Massachusetts community, and *History of Northampton* by James Russell Trumball (1898). They are in heavy demand because of the project's emphasis on local history.

This is one of the distinguishing features of the Hawley approach, integrating the local and national scenes during given periods or on specific issues.

Originally, the intention was to present United States history through Northampton's role in it. This technique was used extensively at first but has been downgraded since the director and teachers found that all students did not respond to the local angle. The mere fact that Northampton is their hometown doesn't automatically provide an interest hooker, Bressan reports. Some students get more initial stimulation from the national scene, then are later curious about hometown opinions and developments of the period.

Conveniently, Northampton has historical ties that prove useful in the program. Jonathan Edwards had his pulpit there; Samuel Ely



was involved in the Shays' Rebellion, which started nearby; Calvin Coolidge served as the local mayor; patriotism vs. loyalty to the crown was a lively issue in Northampton with Joseph Hawley, for whom the school was named, a central and controversial figure.

The local paper, the *Daily Hampshire Gazette*, claims to be the oldest in the Nation, operating continuously since 1754. A valuable source for the eighth-graders is the school's microfilm collection of every issue of that paper.

On the day of my visit to the school, one class went to the newspaper plant to learn about the operation of the newsroom and the mechanical departments. More than an "enrichment" excursion, the trip was designed to help prepare the students for their next assignment: putting out several issues of their own paper. They will be unusual issues, dated in the 1760's and 1770's, and dealing with important questions of the period.

Divided into two sections, the class will take up the British and colonists' viewpoints on the issues separating them prior to, and during, the Revolution. One section of the class will research and describe the English stand on an event or governmental decision and its effect on the merchant class, landowners, and other groups, while the second section does the same from the American side. Then the two sections will switch places and see the same situations from the opposite viewpoint.

The writing, editorial, and production functions of the "newspaper" will all be performed by the students themselves.

"We need to find something physical for the slower track students particularly, to hold their

1961–1963
Democrat
Massachusetts
THOMAS JEFFERSON
THIRD PARTIES
GEORGE WASHINGTON
1789–1797
Federalist
serious
Hon
BULLDOG Independent Party
DEMOCRATS
REPUBLICANS
Coolest
Abe
Honest
Ouimet
to date.
UNIQUE
most exciting

magination lends verve to this mixed-period collage.

interest," Arthur Bressan points out. "But it's important that all our students have a medium which will make them want to inquire. We don't expect them to take an interest just because we say so. Ninety percent of our job is finding a vehicle for the message. We need to motivate students to want to learn."

Thus, the history teachers at Hawley are not content to tell their classes what the colonists and their relatives across the sea were thinking about events leading to the break with the mother country. The students should find out for themselves, through their own research. And a project—in this case producing a newspaper—provides the incentive for learning.

Similarly, the play mentioned at the beginning of this article served as a stimulant to the study of Puritan values and the contrast between certain concepts of that day and those of the present.

A kind of time tunnel technique brought the two periods into juxtaposition, so the concepts of law could be readily examined. Verbal give-and-take over the time barrier added zest for the participants and the audience.

Students handled the whole production—research, script-writing, costume making, and so forth. Involved were four classes that met at the same hour. This was their assignment for the unit known as the Founding Generation, one of six segments of the year's work. It covers the period 1730–60.

Other units of the eighth-grade course are the Revolutionary Generation (1760–90), Young America (1835–60), the Gilded Age (1875–1900), Between the Wars (1920–40), and Traditions of the Present or the American Dream (1960–68).

The approach differs considerably from unit to unit as a variety of tacks are taken to arouse and hold students' interest. In the Revolutionary Generation, besides producing its own newspaper, the class gets into a more formalized research assignment. For the first time, these youngsters do biographical research and turn in a paper, complete with footnotes and bibliography. They pick a subject from a prepared list, do their own investigation in a wide selection of books and other material, then submit the written report. The papers are examined by all members of the class, and every student is required to grade each paper. They then discuss the papers and the reasons for the grades given.

Films are used extensively in Between the Wars. These are commercial Hollywood productions which tell students much about the social and economic aspects of the period. A variety of other films, some owned by the school, but most rented as needed, are brought into other portions of the course. These include television series such as "Saga of Western Man," "You Are There," and "Profiles in Courage," in addition to Encyclopaedia Britannica and other educational pictures. Videotaped productions are also shown. But Hollywood film is used exclusively in Between the Wars.

In the Gilded Age segment, a form of monopoly is played. It can be developed on a national or sectional basis. Students and teachers start with blank boards and devise their own situations. The Westward movement, and resulting land boom of the post-Civil War era, offer fascinating possibilities for role-playing in monopoly. Land values, farm and food prices, and related aspects of the period are worked into the game, together with a number of "crises." Overlapping disciplines come into play. Learning literally becomes a game.

Chronological gaps between the "generations" don't bother the originators of the Northampton project. They say not enough of lasting consequence happened then, at least not locally. In fact, the units are not necessarily offered in sequence, and a whole segment can be dropped from a year's course if desired. That happened when Bressan and his team considered the 1968 presidential election sufficient reason for skipping a unit in favor of a study of national political issues, as well as corresponding local viewpoints.

Actually, the teaching team tries to stay "loose" at all times, ready to adjust to unexpected circumstances and to take advantage of unannounced opportunities.

Hence when a student burst into school one morning with a tale of discrimination, Bressan was ready.

The youth told of being refused service in a local diner because his order came to less than 90 cents. This was the stated policy of the place, but others were being served less expensive orders at the time he was refused, the boy complained.

The student recognized the reason: he was wearing his hair long. "Now I know what discrimination is," he said.

After talking the incident over with the youth, Bressan asked if he thought they should restage it and make a movie. The boy agreed, and so did the diner operator. In a short time, the film was shot as 20 interested customers looked on.

Back at school, Bressan showed the film and used it as the basis for class discussion of prejudice in our times related to prejudice found in the period of history then under study. It proved to be another helpful way of getting into the crux of a problem with historical perspective.

Bressan and Robert Whitman, a pilot program innovator who taught again this past year, want to share their methods with other Northampton faculty members. Inservice training was available to all social science teachers in Northampton from March into summer. Participants in this voluntary program received salary increment credits.

The history project enjoys the staunch support of Superintendent John Buteau and Hawley's principal, James McDonald.

Strong community backing has not yet developed. But because parents tend to be suspicious of "radical" departures from the norm, including, in this instance, the absence of textbooks and tests (except for mid-year exams), Bressan's group recognizes a long-range need for winning over the community, and they are working to achieve it. Newsletters are sent to parents and open houses are held for them and students.

Evaluation of the project is, of course, difficult. Innovators ask: How do you measure a student's gains in conceptual and analytical ability, in his powers of reason? Clearly, not by a recital of historical facts.

But evaluation goes on just the same, though not by conventional methods. Twice a year, under an Office of Education (OE) agreement, three out-of-town educators sit in on Hawley classes for a day and a half. They then compare notes and submit a report to Buteau and the OE.

Students play a videotape of a guest talk on Joseph Hawley, 18th-century Northampton lawyer for whom their school is named.

A Note on the Bibliography

For those interested in learning more about the 12 programs described in this publication—and other similar projects and research studies relating to the program objectives—a bibliography of reports available through the Educational Resources Information Center (ERIC) is included.

ERIC is the decentralized national information network supported by the U.S. Office of Education. Through its central staff in Washington, D.C. and its 19 clearinghouses, each one of which is responsible for a particular educational area, ERIC acquires, reviews, abstracts and indexes research reports and other materials of significance to educators. These are listed in ERIC reference publications, including the monthly abstract journal, *Research in Education.*

The full text of most of the reports and other material noted in this bibliography can be ordered—in microfiche or hard copy—from the ERIC Document Reproduction Service (EDRS). Use the ED or ES number and the prices contained in the listing to order copies from EDRS, The National Cash Register Co., 4936 Fairmont Ave., Bethesda, Md. 20014. Orders should include State sales tax, if applicable, and a 50 cents handling charge. Payment must accompany orders under $5.

ED numbers identify reports on educational studies; ES numbers identify proposals of projects funded under title III of the Elementary and Secondary Education Act.

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